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"THE OCEAN OF THE FUTURE."

IT is not too early for the people of the United States to determine what part they will take in the commercial development which bids fair to make the Pacific ocean a rival in importance of the Atlantic. This is not so extravagant an assertion as it may at first seem. In the memory of some of our readers the Rocky mountains were as far from New York, for all practical purposes, as the planet Mars. To-day there lie, even beyond those mountains, great states ranking in point of intelligence and wealth with the older states in the east, and maintaining close relations with them. But all the growth bordering on the Pacific has not been confined to the United States. Watch the recent evolution of Japan, the opening to trade of China, the settlement of Australia, and the building of the Trans-Siberian railway, which will do for Russia what our own Pacific railways have done for the United States, or the Canadian Pacific for British North America. There is steady progress on both sides of the ocean, and in the islands of the ocean; great populations are developing new tastes to be supplied, opening new fields to artificer and merchant, and pointing out new channels for the exchange of products. To win supremacy in the carrying trade of this greatest of oceans is an ambition worthy of a country which, in a hundred years, has subjugated such a mighty wilderness to the service of man. We have carried civilization across the continent; shall our enterprise now pause on the brink of the western ocean?

During the past year or two English national thought and interest have been centered to an unusual degree upon the extension of the imperial idea and the bringing of the different parts of the empire into closer relations and a broader sympathy. At the bottom of this movement is the prediction, so strongly emphasized at the Ottawa conference of 1894, that "the Pacific is the ocean of the future." Hence the proposition that the mother country and her colonies shall spend millions to establish lines of steamships on the Pacific and other millions to span that ocean with a submarine cable. Not that the Atlantic is to be deserted, but that the next field for notable commercial advancement lies on the other side of the globe. England's own experience with the lands washed by the Pacific justifies her interest in pushing ahead for first place in any further development there. Sixty years ago England exported to China, the Indies, and Australia $40,000,000 worth of goods. Coming down half-way to the present, the same countries bought from England $172,000,000 worth of goods. By 1892 the figures had risen to $354,000,000 for a single year. This does not include English commerce with the Pacific coast of America. Nor is England the only country in Europe that is looking with interest upon the commerce of the Pacific. The French have already begun to build a cable across that ocean, and the Germans are making their presence felt in Asiatic markets.

There is no natural or logical reason why any power in Europe should surpass the United States in the trade with

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the countries beyond the Pacific; on the other hand, our comparative nearness to those countries should give the United States the lead. We have had an important Pacific commerce and can have it again by putting forth such energy as once made the shipping merchants of Salem, Mass., so wealthy. One need not go beyond English records to learn that, 200 years after Elizabeth chartered the East India Company, London merchants were beseeching parliament to overcome American competition on the Pacific. "The American trade with India, however," says an early writer, "did not fall off until the [East India] Company obtained the consent of her majesty's ministers to impose a double duty on the neutral trade of India, which then applied almost solely to the Americans." In the light of these past triumphs—after which we stopped for awhile to build up a great nation on our vacant lands—shall we now be content to see another nation cross two oceans and the American continent (as England proposes to do) and reach China and Australia on better terms for trade than we can offer? We need not wait for the Nicaragua canal, but embark now in measures having for their object the supplying of the wants of eastern Asia. One such measure might be the establishment of factories on the Pacific.

The subject is one which merits the attention of the India rubber trade no less than any other. The events now transpiring beyond the Pacific are breaking down those barriers of exclusiveness which wedded the Asiatics to the past and kept them in ignorance of many of the products of ourmanufactories. A change is inevitable and it will be sudden. Along the line of the Siberian railway there will be an increased demand for rubber overshoes; the market for mechanical rubber goods already existing in Japan will extend to other countries on the Pacific; surgical and druggists' goods will be needed there as everywhere else, to say nothing of rubber-tired bicycles and sporting goods; and, finally, waterproof clothing is as certain to come into wide use in Asia as on any other continent. The European countries which are buyers of rubber goods already have factories in abundance for their production; which suggests that American manufacturers in this line should turn their attention to securing first place in new markets as fast as they may be opened.

THE SILVER PROBLEM SETTLED.

IT is extremely gratifying to us that the able *Boot and Shoe Recorder* should take the trouble to point out the error in our views on silver, as expressed in these pages last month under the heading "Good Old Time Ideas of Sound Money." Concerning the relative values of gold and silver, our able contemporary disposes of every difficulty with a single stroke of the pen. Listen:

> There can be no possible question of the fact that this difference is the result of the change in the laws which closed the mints to silver.

What could be clearer? Just turn to the statute books and have that amendment stricken out, and immediately every owner of silver bullion in the world will be able, if he chooses, to exchange it for twice as much gold as he can get for it to-day. The fellow who made two blades of grass grow in the place of one "won't be in it" as a benefactor. We will have it done at once. We will stop our secretary of the treasury, Mr. Carlisle, in his efforts to convert the people to what the *Recorder* terms "thoroughly dishonest" ideas, and let him take a rest by the seaside during this hot weather. We will earn the thanks of India, and of our good neighbors in Mexico, and bring joy to the merchants of Shanghai and Hong Kong and Singapore, putting an end forever to the trouble in computing the value of the rupee. We will expose some wrong ideas about money that have prevailed in the world since the days when Abraham tested the value of money with the scales and not by any act of government.

By the way, it occurs to us that we do not just now remember the particular law which has changed the relative values of gold and silver in the metal markets, and we can't become such a great benefactor, after all, unless our able contemporary should point it out to us. Then we will print it in golden letters and send out marked copies to every country on the globe, until the last "modern financial quack" referred to by the *Recorder* has been shamed into silence.

But the good work need not stop here. When congress has made a certain amount of silver worth as much as a certain amount of gold, regardless of the commercial value of the metals, it might as well make Sierra Leone rubber equal in value to the finest Pará grades. In the next place, there would be no reason why it should not have small disks of goat-skin stamped with the words: "This shall be a legal tender for $1 in payment of subscriptions to the *Boot and Shoe Recorder*." Then we should have a really practical test of the power of government fiat in the creation of values.

AN IMPORTANT NEW CATALOGUE.

DURING the present month the trade may expect to receive, from the New York Belting and Packing Co., Limited, a catalogue of their products which will surpass, in more than one respect, any other publication of its class up to date. From an inspection of the proofs of the book—which will be an octavo of about 100 pages—it can be stated that the arrangement will be convenient for intending purchasers. Certain sections will be devoted to each class of goods, beginning with a general descriptive account, in which much information of value will be given, followed by detailed particulars, including prices. Not only is the catalogue to be handsomely printed, but there will be a judicious use of illustrations, both for utility and for ornament.

AMONG the many reasons suggested for the failure of pneumatic carriage-tires to come into use as rapidly as their good qualities might have led the trade to expect, one found in the London *Times* is at least interesting. In a report of one of the recent great English bicycle shows it said: "The application of pneumatic tires to the wheels of carriages and other horse-drawn vehicles is illustrated on a few stands, but the hindrance to their more general adoption in this direction appears to be in the want of an efficient brake, which will have to be of a very special character."

WALLER'S MADAGASCAR RUBBER CONCESSION.

SINCE the government at Washington has become actively interested in behalf of John L. Waller, the ex consul for this country who is now imprisoned at Marseilles, it appears that the case is one likely to be of grave importance. First, of course, is to be considered the protection due from the government to an American citizen, wherever he may happen to be. But another question, as stated by Mr. Waller, is this : "Has the Malagasy government the right and power, under our treaty with Madagascar, to grant and lease lands to American citizens without the consent of the French resident-general?" This involves not merely the rights of Waller, under his grant of valuable India-rubber forests from the queen of the Hovas, but the whole question of the development of trade between the United States and the island of Madagascar. So far as the ex-consul's arrest, trial, and conviction by the French court-martial at Tamatave are concerned, with his transportation to France, and his detention there while awaiting (as is claimed) a review of his case by competent civil authority, the American ambassador at Paris is moving, under instructions from Washington, to get at the facts. Meanwhile the business aspects of the case may be considered. Following is a copy of the now famous land-grant, and, while India-rubber is not especially mentioned, it is known that this product is the one at present deemed of chief importance :

FOREIGN OFFICE
ANTANANARIVO, Madagascar,
March 5, 1894.

Know all men by these Presents :

That the uncultivated lands hereinafter mentioned, measuring in area fifteen miles square, and belonging to her Majesty, the queen of Madagascar, and situated in the district of Fort Dauphin, are hereby leased and granted unto John L. Waller, Esq., of Kansas City, Kansas, U. S. A., his heirs or assigns.

First. The period for which this lease is granted is for a term of thirty years, beginning from the date this agreement is signed, at the end of which time her Majesty's government hereby agrees to and covenants to make unto John L. Waller, Esq., his heirs or assigns, a new lease, similar in all respects to this, and to run for the same period of thirty years.

Second. Should the lessee do anything contrary to the laws of Madagascar, her Majesty's government may cancel this lease, even before the time for which it is written shall expire, and the lessee shall claim no compensation whatever.

Third. And it is further agreed that John L. Waller, Esq., his heirs or assigns, shall have the right to cultivate and gather rubber, sugar, coffee, tea, or any other products that may be found profitable and not contrary to the laws of Madagascar.

Fourth. It is further agreed that John L. Waller, Esq , shall begin work upon the lands herein granted within five years from the date this agreement is signed, otherwise this indenture becomes null and void, and any improvements that may have been made upon the said lands shall become the property of her Majesty's government.

Fifth. John L. Waller, Esq., hereby further agrees to pay to the Malagasy government for the privileges herein granted the sum of $500, at the end of five years from the date of this agreement, and after which date he hereby agrees to pay a sum equal to 10 per cent. yearly of all the money realized from the sale of timbers, rubber, and all other natural products, and 1 shilling and 4 pence per acre yearly upon all lands placed under cultivation in growing tea, coffee, sugar, vanilla, or any other agricultural products.

Sixth. John L. Waller, Esq., his heirs or assigns, are hereby forbidden to dig minerals from these lands under this lease, but he is hereby given the first right and privilege to a mineral concession upon these lands, provided he should want it.

Seventh. John L. Waller, Esq., agrees to pay such taxes upon the said lands as are usually levied upon her Majesty's subjects.

Eighth. When the within stipulated term of time shall have expired, or if John L. Waller, Esq., his heirs or assigns, shall leave these lands as stipulated in article 2, he agrees to turn over to the Malagasy government the plantations, buildings, and all materials that were employed in the improvement and cultivation of these lands without any compensation whatever.

Ninth. Nothing in this lease contained shall be construed to interfere with the rights of her Majesty, the queen of Madagascar nor the laws and prevailing customs of her kingdom.

[SEAL.] JOHN L. WALLER.
ANDRIAN MFIDY,
Minister for Foreign Affairs.

This grant is located near and partly comprises the famous and valuable port of Fort Dauphin, where there is a splendid harbor, and back of which lies one of the richest districts of Madagascar. It is, moreover, a healthy section of country. This place was chosen by the French, 150 years ago, above all other parts of the island, as a location for a colony, but they were driven out by the Malagasy, and ever since, it is alleged, the French have been trying again to get control of the territory. Partly on account of the desire of the Hova government to encourage and increase American interests in their island, and for other considerations, Mr. Waller was able, in spite of great opposition on the part of the French resident, to secure this valuable tract of land and harbor. Shortly after the date of the land-grant printed above, the French ministry decided to make war on the Malagasy and annex their whole island, when Waller wrote to America : "We conclude that their object is to prevent us from doing anything with the concession until they gain control." The annexation scheme was defeated in the French legislature, but Waller requested from the government at Washington an expression of opinion on the validity of his grant, because people had become cautious about subleasing the lands.

On December 4, 1894, Waller wrote to his counsel in this country that he had already leased to various persons 5340 acres of lands and had applications on file for 6950 acres more With a favorable expression from Washington he expected to have at least 50,000 acres leased before June, 1895. Agents had been appointed in London and other European cities who reported that the whole (144,000 acres) could be leased within a reasonable time. The following estimate was made of returns upon the 5340 acres leased on the last date above mentioned :

[Tenants exempt from rent for two years, to March 15, 1896.]

Third year, 25 cents per acre		$ 1,335.00
Fourth year, 37½ cents per acre		2,002.50
Fifth year, 50 cents per acre		2,670 00
Sixth year, 84 cents per acre		4,485.60
Seventh year, 84 cents per acre		4,485.60
Eighth year, $1 per acre		5,340.00
Ninth year, $1 per acre		5,340.00
Tenth year, $1.25 acre		6,675.00
Remaining 50 years, $1.50 per acre		400,500.00
Total on *rents only* for 60 years		$432,903 70
Royalty on rents to Government, 60 years	$97,900	
Payment to be made at the end of fifth year	500	
		98,400 00
Net rents in our favor on 5340 acres for 60 years		$334,503.70

At the same rate it was estimated that the net rentals for 12,290 acres (including all that had been applied for) would aggregate $780,559.97, not taking into account any profits from the sale of India rubber, gum rafia, cocoa, indigo, ebony, mahogany, rosewood, teak, or other natural surface products, to say nothing of mineral deposits believed to be of value.

After the signing of the land-grant the French resident at Tamatave published in the French official paper there —*Le Madagascar*—and elsewhere a notice, not officially signed, to the effect that "the French government did not recognize any concession made by the Hova government to foreigners without the consent of the French resident, and their being registered at the residency." The effect of this, according to Waller, was to deter many from leasing his lands, even after applications had been made. In one of his letters Waller asserts that although Frenchmen, Englishmen, and other foreigners have been leasing lands in Madagascar for years—only Frenchmen registering their contracts with the French resident—no such notice as is mentioned was ever issued until the grant was made to Waller, an American citizen, by the Hova government.

Associated with Waller in his Madagascar enterprises is his stepson, Paul H. Bray, who was charged by the French with complicity in Waller's alleged political crimes, and who was exiled from the island at the time that Waller was tried and sentenced. Bray with difficulty reached France and came thence to Washington to make a representation to the government. Their counsel is the Hon. John M. Langston, who has written to THE INDIA RUBBER WORLD within a month his opinion that the efforts then making would "result in the maintenance of Mr. Waller's concession and the payment by the French government of a reasonable indemnity for his illegal and outrageous treatment." Other details respecting Madagascar and Waller's case were published in THE INDIA RUBBER WORLD for April 10 last.

HOW IS VULCANIZATION ACCOMPLISHED?*

THE chemical nature of caoutchouc is but little better known to-day than it was sixty years ago when the products of its dry distillation were examined by Gregory. Recent study has shown that chief among these derivatives of caoutchouc is a liquid called isoprene which has the important property of spontaneously changing into rubber, on long standing. Artificial rubber is thus a chemical possibility. Whether we shall succeed in making it commercially from isoprene seems very doubtful. The manufacture of cheap isoprene is an exceedingly difficult task and we are not yet able to completely convert it into rubber. Chemically caoutchouc or pure rubber is an "unsaturated" hydrocarbon; or in other words a compound of hydrogen and carbon possessing the chemical property of directly combining with other compounds and elements.

The chemical treatment of rubber in its manufacture is limited to vulcanization; the change effected by subjecting it to the action of sulphur at temperatures above the melting point of the latter or to solutions of chloride of sulphur in the cold.

The chemistry of vulcanization has never been thoroughly investigated or satifactorily explained. It is often spoken of as due to the "absorption" of sulphur by the rubber or its formation of a "substitution product" with sulphur. These terms express in a conveniently vague way the uncertain chemical theories regarding what actually takes place in the curing of rubber. It is fair to conclude that neither the vulcanization with sulphur nor that by chloride of sulphur is in the least understood. Even such a simple question as that regarding the minimum quantity of sulphur required for vulcanization or the equally simple one whether the vulcanizing action of chloride of sulphur is due to the sulphur or the chlorine, are still objects of controversy. It is, however, agreed that vulcanization cannot be effected by less than two per cent. of sulphur.

In investigating the chemistry of vulcanization the author worked with the cold cure process because it effects vulcanization under conditions more easily under control than is the case with sulphur and heat. Rubber vulcanized by chloride of sulphur forms an addition product, the two substances uniting into a definite compound. Isolating this compound the author was able by suitable means to entirely remove from it the combined chlorine leaving the vulcanization product intact and *physically unchanged*. Any attempt to remove the sulphur from its combination with the rubber is unsuccessful and results in the total destruction of the substance, thus proving that the vulcanization is entirely due to the action of the sulphur and not at all to the chlorine.

Rubber will combine with its weight of chloride of sulphur forming a product containing twenty-three per cent. of sulphur. This is the highest vulcanization product (*i. e.*, containing highest per cent. of combined sulphur) that rubber is capable of forming. On the other hand, the lowest vulcanization product contains five per cent. of combined sulphur. This is a homogeneous body and contains no uncombined rubber. It is not simply a mixture, in unal-

* Abstract of paper by O. C. Weber in the Journal of the Society of Chemical Industry (Jan. 1894). Prepared expressly for THE INDIA RUBBER WORLD.

tered rubber, of a rubber sulpho-chloride. Between these products are eight other sulpho-chlorides of rubber. The whole forming a series containing from one to ten atoms of combined sulphur. The great difference in the physical properties of the end members of the series indicates that each of these ten varieties of vulcanite will have distinct properties to distinguish it. It is a matter of great practical importance to define clearly the specific qualities of each of these products. The vulcanization of rubber, by chloride of sulphur, consists in the formation of one or more of these sulpho-chlorides of rubber. The presence of chlorine is without influence on the state of vulcanization; it is merely the means in the chloride of sulphur which enables us to act on the rubber with a double atom of sulphur in an effective way.

The present process of vulcanization with chloride of sulphur does not admit of homogeneous vulcanization. A practical process based on the reaction between rubber and chloride of sulphur will ultimately displace the processes now in use for curing all kinds of rubber articles. The present sulphur cure is an exceedingly crude, unreliable, antiquated and unscientific process kept alive by our ignorance of the chemistry of rubber. The process is essentially in the stage to which the work of Goodyear, Hancock and Parkes advanced it.

In the original paper Mr. Weber gives in detail the tests and analyses which support his conclusions regarding the chemical theory of vulcanization. He has dealt very ably with the purely scientific aspects of the problem and promises something in the future on the practical questions involved in a new method.

While the actual difficulties are many and great they are not believed to be insuperable. Certainly there is more need to-day than ever, for some improvements in vulcanization methods capable of giving such complete control of the process that any one of the above named series of ten vulcanization products can be obtained at will; or any desired combination of them, as circumstances may require.

THE DECLINE IN THE PRICE OF PNEUMATIC TIRES.

*By a German Rubber Expert.**

THE victory of the pneumatic tire over all other forms is now conceded by every one, inasmuch as it has proved itself equally well adapted to every requirement in the sport of bicycling. In Germany there are already twelve factories making pneumatic tires and they enjoy an extensive trade with manufacturers of and dealers in wheels, at home and abroad. Pará rubber has been used exclusively hitherto in the production of pneumatic tires, owing to the idea—and a very correct one—that for an article so much exposed to wear, this kind of rubber was none too good.

Of course these high-grade goods have made necessary proportionately high prices. Two years ago the retail price of a pair of pneumatic tires made of Pará rubber was 90 marks, which price, in proportion to the cost of a wheel of the newest construction was not of great consequence. Every right-minded wheelman was satisfied to pay a few more marks for a reliable tire, than to run the risk of damaging himself and his machine by using a tire of inferior quality.

"Good and cheap" are traits which do not amalgamate in a wheel. Unfortunately it is a fact that since the beginning of the year 1894 the prices of pneumatic tires have gone down steadily and seem to continually show a sinking tendency. What is the cause of this remarkable decline? True, the manufacturers have been enabled by practical experience, and the use of improved appliances, to produce a pneumatic tire of faultless quality, in a more simple and a cheaper manner.

First in order, therefore, as tending to cheaper prices, is the fact that with experience and advanced methods tires can be produced at less cost than formerly, and without flaws, preventing the accumulation of unsalable goods. Another item is the cheaper production of the woven covering of the tubes, inasmuch as several firms have made it a special business to produce material for wheel-tire covers. On the contrary, the most important material, Pará rubber, has advanced considerably in price. The necessary advertising expenses seem also to increase steadily, as one factory, tries to excel another in offering their "only genuine" product in the sporting papers, not taking into consideration the business expenses, which do not become less.

It is to be observed, therefore, that reduction and advance in price of material remain about equal, and yet there is this remarkable decline in prices.

This calamity must be ascribed to the wild-cat competition, which, by continual price-cutting, is determined to secure customers at any sacrifice, much to the damage of honest business houses. While at the beginning of 1894 a pair of pneumatic tires could not be obtained for less than 45 to 50 marks, now a pair of so-called Pará tires sell for from 30 to 35 marks, and cheaper "if required." Certainly such goods can have no further claim to the name of Pará than that of having been stored in proximity to Pará rubber. No terms seem to be strong enough to condemn such methods and warn the public against such shoddy tires and imitations. All low-priced tires ought to be marked "second class" and offered as such.

One acquainted with the current prices of crude Pará rubber need not be an expert to see that at the above foolish prices it is impossible to produce genuine Pará tires. Of course it is possible to make a cheaper grade of tires, but only at the expense of their quality and durability; those tires benefit neither the manufacturer nor the user. Not only the rubber, but everything pertaining to the tire—especially the web—is of great moment to its durability, and should be of best quality, which is plain to every rider.

A mere superficial examination of a tire of the "second class" reveals at once deficiencies and shows a vast differ-

* Condensed from an article in the *Gummi Zeitung* (Dresden)

ence between the two tires. It is not made of pure rubber, but of composition and scrap; the inner material is of poor quality; the rubber coating is sometimes entirely absent, making the tire, when wet, liable to rot; and the already poor quality of rubber used is not protected. Good tires are furnished with an extra strong solid and elastic lining, covered by a solution of pure Pará rubber, making it very durable. Very often the lining of cheap pneumatic tires is not properly fastened and it wrinkles, producing friction and wear on the inferior inner tube, causing it soon to leak and become useless. Generally in such cheap tires a cheap valve is used also.

The weight of these inferior tires is considerably more than of those made from pure Pará rubber, which is a decided disadvantage. It is not to be wondered at, therefore, when such tires soon show considerable wear and split at the sides, of which many complaints have been heard.

It is to be lamented that factories put such inferior pneumatic tires on the market, and it is therefore a dire necessity for all respectable manufacturers of tires, to keep up the quality of their goods and seek renown from the fact that only pure gum is used by them, and force bad rubber and articles manufactured from it, out of the market. At such a time, any further attempts to force down the prices of pneumatics, which we are sorry to say have not been altogether unsuccessful, will be smothered in the bud, without detriment to honest manufacturers, and will disappear from our vision.

THE editor of the journal printing the above article thus comments on it: "Of the above statement of a specialist we must say that it is only too true. At this moment a sample of those 'cheap' pneumatics is before us, and we are almost ashamed that such a thing must be called a product of the German rubber-industry. Not noticing the paper-like air-tube fitted in a very careless manner with its valve and its outer covering, manufactured from any other but good material, the outer tube with its rough surface and its creased lining is better suited to destroy the air-tube than to protect it. Such a tube cannot last more than two weeks. All we can do is to give warning to abstain from this price-cutting and from bringing this industry into a bad repute, and suffering the inevitable consequences. It would not be the first time that the rubber-industry has lost an important article, just as it happened with belting and foot-mats.

THE MANUFACTURE OF INSULATED WIRE.

By John E. McGregor.

PERHAPS no part of the rubber business in past years has grown more rapidly or occupied a more important part than has the covering of wire for insulation. Of course it should be remembered that not all wire that is insulated is rubber covered. The two principal lines of insulation however, are rubber covered wires and Gutta-percha covered wires. The rubber covered are for use on the land, and the Gutta-percha covered are for use under water or where they are buried in damp places. Outside of these there are wires covered with what is known as weatherproof compounds in which no rubber or Gutta-percha is used at all. These coverings are oftentimes made of cotton thread which is saturated with hot asphalt, ozokerite, or similar gums. The thread is then braided over the wire, two or more coatings being employed. Of course it is not expected that this covering will do much more than protect the wire from water and from the weather. Very similar to the wires that are covered with braids are those covered with tapes. These tapes are really strips of cloth that have been frictioned with, or soaked in, an insulating compound and then wound around the wires. There are machines designed for this purpose, the simplest being one that winds the tape around the wire in one way, another bobbin following and winding it the other way to break the joints. The braided wires are covered by a machine similar to that used in braiding covers on whips. A very common solution for tapes is simply hot bitumen. Where ozokerite is used a fine polish may be put upon the surface after the braiding by running it through an ordinary polishing machine. When it comes down to the question of the manufacture of wires that are insulated by India-rubber a more difficult and much more interesting problem is met. To begin with it is a well-known fact that India-rubber, in order to be successfully vulcanized must have sulphur in some form. This sulphur of course acts unfortunately upon copper wire. For rubber covered wire therefore, the copper is almost all covered with a coating of tin. In order to further protect this tinned wire it is quite common to cover it with an unvulcanized rubber compound of a fair degree of stiffness but having no sulphur in it at all, and therefore never curing. Outside of this is run a coating of rubber compound in which sulphur has been mixed, which when run through a vulcanizer cures, and holds the unvulcanized compound firmly in its place, besides protecting it from injury. An insulated wire of this kind is usually covered with braid or tape which is used more as a protective armor than anything else. The braid unless put on carefully is liable to cause blisters, so much so that many prefer the tape to the braid. At the same time a proper compound carefully vulcanized will bring out a perfectly smooth product. In some cases as a further precaution against sulphur coming in contact with the wire, a winding of cotton is braided on to the wire itself before the rubber is put on. In the manufacture of rubber compounds for wire insulation there are almost as many different mixtures as there are men employed. Some use Pará gum alone with a very slight compounding of whiting, others use silica, others still, use sulphur as the vulcanizing agent and some use sulphide of antimony. Indeed, there are an infinite variety of opinions regarding the use of pure gum as well as of the use of substitutes

made from oxidized oils, and of devulcanized rubber. As a matter of fact good results have been obtained from almost every one of the compounds above indicated, the simple rule being that a man should never put anything into a compound for insulating wire unless it brings about some beneficial result other than that of mere cheapness. The machinery used in an insulated wire factory is primarily the same as used in any other rubber factory ;—that is, the rubber is always washed, dried and calendered. When the stock comes from the calender, and which is oftentimes a very small one, made particularly for this work, it is run over a series of knives which cut it into strips. For this purpose a very ingenious table has been constructed which separates these strips, automatically dropping them into separate bins, from which they are taken to what is known as the roller covering machine. This in its simplest form is a pair of grooved rolls, the wire running through the center, the rolls knitting the two strips together over the wire. This is an English method of covering, and is recommended for the reason that the copper wire always comes exactly in the center. A quicker method, and one that has as many friends, is the forcing method, that is, the use of the tubing machine. Here the rubber instead of being cut in strips of special width is merely fed in and forced around the wire and in that way the covering is made. The rubber after being put on by either of these methods is covered with a coating of tape or braid and then wound on huge reels and vulcanized in open steam heat. Where a rubber compound is to be run through a tubing machine, it is oftentimes well to use a very small percentage of rubber substitute because it runs so much easier and so much more evenly. The unvulcanized core, if it is white, consists of rubber, magnesia or silica, and whiting, the magnesia acting as a dryer. For a black core, lamp black and litharge would both appear in the compound. As a rule, for all kinds of insulated coverings of rubber, the less sulphur that is used the better. One English expert advises as much as 24 per cent. sulphur to the weight of gum. As a matter of fact, one-fourth of that would do the work just as well with the compound he quotes, and there would be far less danger of the wire being affected by the excess of sulphur. As before indicated there are a score of different compounds that bring about practically the same results,—for example, in red rubbers the color may be derived either by oxide of iron or golden sulphuret of antimony. The oxide of iron of course is not to be recommended yet it is often employed. Where antimony is used great care should be taken not to over-cure it, as that diminishes the life of the rubber exceedingly. There are in the United States twelve large corporations that make a business of the covering of wire with rubber compounds. All parts of the work are done here, even to the drawing of the copper wire through fine diamond dies. As yet no American concern has equipped itself for the manufacture of deep sea cables.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 537,508.—Pneumatic Tire. George Van Wagenen, New York, N. Y.

A pneumatic tire for a wheel, having molded within its elastic tread and on planes conforming substantially to the surface outlines of the tread, the series of transverse and longitudinal lines of independent plates separated from but overlapping each other at their side and end edges and forming an internal lining of independent plates separated from each other by the rubber of the tread and adapted to yield with the rubber both transversely and longitudinally on lines following the surface outline of the tread.

No. 537,536.—Pneumatic Tire. Hippolyte J. La Force, Toronto, Canada.

In a vehicle tire, the combination with the inner fabric sheath having its edges turned out, of the threads passed along in the folds of the edges and crossed from one edge to the other over the sheath at intervals, and the outer sheath or tread inclosing the threads and inner sheath.

No. 537,537 – Pneumatic-Tired Wheel. William Y. Lambert, Sheffield, England.

In a wheel, the combination with a rim consisting of an outer channeled plate and an inner plate secured therein and having a central projecting channel, forming grooves; of a cover having beads on its edges resting in the grooves; and the locking plates secured on pins having their upper and lower ends journaled in the plates, and provided with heads for turning them and securing the beads in their grooves.

No 537,933.—Tool for Repairing Pneumatic Tires. John F. Palmer, Riverside, Ill.

A tool comprising arms upon a common pivot, a bearing pivotally supported between the arms, a stem movable through the pivot and fastened at one end to the bearing, and cutting members, one on the outer end of the stem and the other carried by the pivot.

No. 538,142.—Tire for Cycle-Wheels. Edward G. Wood and Enoch Armitage, Liverpool, England.

A tire comprising an outer cover, a core formed of transverse supporting pieces, smaller distance pieces arranged between the supporting pieces, a retaining wire or ring on which the supporting sections are held, a layer of flexible material surrounding the supporting pieces and an air tube held between the layer of flexible material and the outer cover.

No 538,689.—Elastic Tire for Wheels. Anatol Metzger, Moscow, Russia.

In a wheel the combination of a felly, an outer metal tire having small projections, an elastic India-rubber ring, guiding slots, guiding pins, and sockets.

MECHANICAL GOODS.

No. 537,864.—Sink-Plug. Charles E. Smith, Bridgeport, Conn.

The combination of the rubber plug recessed at the bottom and having a perforation extending therethrough from top to bottom, the cap plate surmounting the plug and having rising therefrom a hollow perforated nub, the ring within the nub, the tube extending through the perforation in the plug and having

a flange extending from its upper end, the disk interposed between the flange and cap plate, the edge of the latter being curled around the disk and flange below the bottom of the latter, and the washer around the lower end of the tube and against which washer the bottom of the tube is expanded.

No. 538,727.—Lawn Sprinkler. Jonathan Byler, Los Angeles, Cal.

In a combined sprinkler and sprayer, the combination of a body having a chamber with supply and discharge apertures a flange for receiving the direct impact of the liquid, a deflecting stem for spraying and an adjustable nozzle for either sprinkling or spraying.

DRUGGISTS' SUNDRIES.

No. 537,979.—Bottle Stopper. Lewis Kalling, Baltimore, Md.

A bottle stopper which consists of a piece of rubber or cork having its top and a portion of its cylindrical surface covered by a practically cylindrical cap free from corrugations on the part which comes into contact with the bottle mouth.

No. 538,110.—Dental Pallet. John Hellings, Philadelphia, Pa.

A dental pallet consisting of a cup, a pouch, a lamp pocket, and a supporting ring, the cup, pouch, pocket and ring being formed of soft rubber, and the parts combined.

No. 538,967.—Atomizer. William Augershoff, New York, N. Y.

In an atomizer, the combination of a liquid vessel, a tubular head-piece applied to the neck of the vessel and provided with a detachable nozzle, a bulb connected with the head-piece, a block inserted in the head-piece and provided with an atomizing nozzle and a valved opening, and a supply tube screwed into the block and provided with longitudinal grooves or channels in the part screwed into the block.

BOOTS AND SHOES.

No. 538,270.—Overshoe-Fastener. Peter Nelson and Henry H. Nelson, Minneapolis, Minn.

An overshoe fastener, consisting of a metal strip, secured to the inside of a rubber or overshoe, and provided with one or more openings, arranged one above the other, and a pin or lug secured to the outside of the heel or counter of a shoe or boot, and provided with a beveled lower side to permit the pin to slip easily over the plate to engage one of the openings therein.

No. 538,473.—Shoe-Fastener. Isaac D. Wright, Sedalia, Mo., assignor of three-fourths to C. C. Van Wagner, W. H. Van Wagner, and R. H. Moses.

In a shoe fastener, the combination of a resilient spring-frame, auxiliary assisting springs connected to the frame, and sheet metal clamps adapted to engage the sides of the shoe, and through which one of the ends of the spring-frame and auxiliary springs are passed in order to form a guide and retainer for the upwardly extending portion of the body of the spring frame.

INSULATION.

No. 538,029.—Insulated Conductor. William M. Habirshaw, New York, N. Y.

The combination with a conducting core of an insulating coating or covering composed of strips of soft vulcanizable rubber laid longitudinally and spirally wound overlapping strips of cut-sheet, applied around the core in the order named in alternate layers and vulcanized.

MISCELLANEOUS.

No. 537,975.—Driving-Rein Guard. Frank E. Hall, Newton, Mass.

A driving rein guard consisting of removable elastic shaft tips provided with sockets and with holes through the sides thereof containing tubular sockets with contracted mouths, the tips being connected to each other by a cord with enlargements on its end and secured in the tubular sockets.

No. 538,806.—Sleeve Protector. Edgar A. Wilhelm, New York, N. Y.

A cuff and sleeve protector comprising a frame and a water-proof covering secured thereon, having an aperture therein, and a series of radial stiffening ribs arranged between the aperture and the frame, the water-proof covering being flexible and elastic along the edge of the aperture, and becoming stiffer and less elastic as it nears the frame.

No. 538,089.—Pneumatic Saddle. Henry G. Stiebel, Jr., St. Louis, Mo.

A saddle comprising a saddle portion proper, a pneumatic pad having medial reduced and lateral enlarged communicating chambers, terminal sealed extensions for the enlarged chambers, a sheet interposed between the saddle proper and the pad, a series of sheets on the opposite side of the pad, the sheets overlapping the sealed extensions, and having their free edges and those of the sealed extensions secured to the saddle proper, a nozzle inserted into the reduced chamber and having its inner end supported by the lower wall or edge of the reduced chamber, and suitable plates located between the saddle and the sheet interposed between the saddle proper and pad, to prevent penetration by the rein-ring bolts.

PARA RUBBER IN CEYLON.

THE latest annual report of the royal botanic gardens of Ceylon, dated at Pérádeniya, February 6, 1895, and signed by Henry Trimen, F.R.S., director, renews attention to the persistence with which the attempt to acclimatize Pará rubber in India is being carried on. Considering how much native rubber there is in the world this might seem to be labor lost, but the success of the British is well-nigh driving Chinese tea out of their markets with tea of their own production, and in supplanting the native Peruvian cinchona-bark with the cultivated plants in the East Indies, keeps alive the hope that Pará rubber may eventually be grown under the flag of their empire. Dr. Trimen has one Pará rubber tree nineteen years old which has been tapped several times, the yield for 1894 having been 3 pounds and 3 ounces of cured rubber of the best quality. The yield has increased with each tapping, and the tree is reported to be in first-class condition. There are now 30 of these trees at Pérádeniya and 424 at Henaratgoda old enough for seed-bearing, and during the year 86,000 seeds were gathered from them and distributed to planters. Some of the seeds are always overlooked, and every year a little crop of seedlings comes up under the trees. A package of 200 seeds was sent to the Kew gardens, where every one of them germinated after having been in the mail for a month.

In commenting upon the rubber experiment the *Tropical Agriculturist* (Colombo) says; "Dr. Trimen has so good a report to offer that we think there ought to be a considerable revival of interest in the cultivation, that is of the Pará variety. That a good deal is being done in a quiet way is evident from the fact that no less than 86,000 seeds were distributed to planters last year. . . . . His bleeding has been once in two years, but he believes the Pará trees will bear to be tapped annually, if a commencement is not made until they are at least ten years old. Therein lies the difficulty with European planters in a haste for returns—'who is going to wait ten years?'—and yet it has to be done for cocoanuts, and the Pará rubber gives less trouble in its planting and cultivation. Our judgment is, therefore, that every low-country tea-plantation ought to have a certain number, or reserve, of Pará-rubber trees."

The Gutta-percha trees in the garden at Henaratgoda, grown from seeds planted in 1880, yielded a large crop of fruit last year.

THE large amount of rubber waste imported into the United States from Canada is said to be due to the fact that Canadians, on account of their long-continued severe winters, wear and discard a great many overshoes.

AN EXTENSIVE RUBBER BELT CONVEYOR.

THE excavation work on the great Chicago drainage canal, now in course of construction, has afforded a severe but satisfactory test of the value of India-rubber belt conveyors for removing material. The belts used have been in an installation by the American Hydraulic Dredging Co. (Chicago), after designs by their president, Lindon W. Bates. Two 5 ply belts, 22 inches wide, are carried on concave wooden rollers, in a steel frame. One is for use in the pit, the weight of the load serving to hold it down, and the other is for the spoil bank. The rubber belts were furnished by W. D. Allen & Co. (Chicago), and in a recent letter to them concerning one of their belts, 1200 feet long, Mr. Bates wrote: "This belt is moving an average of 1500 tons per day of tough, blue clay, which is regularly fed upon it by steam shovel and intervening rotary granulator. The belts carrying this material are perhaps, larger than any heretofore used. The wear and tear has been surprisingly small, and I feel that this method of conveying has a wide field in canal excavation, and probably in placer mining." The plant mentioned was designed to remove the upper eighteen feet of the section on which it is employed. The work done by the rubber belts is to transmit rocks and earth, and they give satisfaction in any weather in which men can work. The pit, however, must be kept dry, as the belts stall when loaded with mud or wet material.

RUBBER BELT CONVEYOR.

Some details of interest regarding Mr. Bates's plant are contained in a paper read recently before the Western Society of Engineers, at Chicago, by E. R. Schnable, assistant engineer in charge of the Summit division of the drainage canal. In addition to the rubber belts the plant consists of a 60 horse-power Toledo steam-shovel, a 120-horse-power granulator, and a 50-horse-power car driving the belts. The labor required is thus classified: Belt force, 24; granulator force, 6; steam-shovel force, 5; general force, 2;—total, 37.

HOW VULCANITE EMERY WHEELS ARE MADE.

VULCANITE emery wheels are made the world over, yet the business is a small one and for that reason in a few hands. It is claimed that those made in the United States are superior to those made abroad, although some English and German wheels are sold in this country. The plant required for making emery wheels is practically the same as that used in the manufacture of ordinary mechanical goods, that is washers, grinders, calenders, vulcanizers and presses are all brought into play. In addition to these there are special machines, such as lathes and drill presses which are used particularly for this work. As a rule in compounding this kind of vulcanite, Pará rubber has been found to be altogether the best. The compound consists simply of Pará rubber, sulphur and emery, the point being to get as much emery incorporated into the rubber as is consistent with the best cutting quality and the greatest strength. As a variety of different grades of emery are used from the very coarsest to that which passes through a 160-mesh sieve, it will be seen that for this cause alone, there must be a great variety of wheels. The process of mixing the sulphur and emery with India-rubber is practically the same as that ordinarily used in rubber mills except that in the first part the mixing the rolls are set tight together and the rubber runs through in thin sheets. The emery is then sprinkled on these sheets by hand, the sheet is folded over and passes through the rolls two or three times, more emery is added, and the process repeated until the ingredient is all in. The mill of course is gradually opened as the sheet thickens. From the mixing mill the compound goes to the calender where it is run out in sheets of the proper thickness for the wheel, or if a thick wheel is to be made several sheets are pressed together. From the calender these sheets are taken to the drill-press where they are cut in a circular form to fit the molds. The drill-press is a very simple arrangement fitted with a knife that cuts any sized circle needed. After being cut in the shape desired it is dusted over with French talc to keep it from sticking to the mold, is then placed in the mold, and run into a hydraulic press and great pressure brought to bear upon it. The press is heated about 325 F. and here the molds are allowed to remain from forty to forty-five minutes. They are then taken out and the component will be found to be partially cured. It is then taken from the mold, put in a lathe and the talc taken off its surface by a slight cut of a diamond pointed tool. The wheels are then laid on perfectly smooth iron plates and put in the vulcanizer where they receive the final cure which is that used ordinarily for hard rubber. There are for this three different cures employed, for soft, hard and extra hard wheels, the heats varying from eight to twelve hours and the temperature running about 325° F. As in all work of this kind, great care should be taken in the curing else the wheels may become porous. After the cure has been effected the wheels are put in a lathe and trued up and then brushed over with rubber cement. When this is nearly dry it is dusted over with loose emery of the same degree of fineness as that which enters into the wheel. Of the dozen or more kinds of emery wheels made none can compare for strength or safety with the emery wheel that has hard rubber as its basis.

RUBBER-FOOTED stirrups are now exhibited in many stores devoted to saddlery and harness-goods. The stirrups, made in the usual forms and of the proper appearance and weight, have a neat rubber mat counter sunk in the foot-plate. Their use is to give the foot a better hold upon the stirrup.

A NEW AND PERFECT FIRE EQUIPMENT.

THE Boston Belting Company, of Roxbury, Mass., have about reached perfection as regards fire fighting equipment, having to-day one of the best protected plants in Boston if not in Massachusetts. The extensive character of its plant made it necessary for the company to protect its buildings by other than the ordinary methods.

Stony Brook, which flows through the premises, is capable of furnishing an ample supply of water during most of the year, and in addition, city hydrants are located at various points throughout the yard and on the streets surrounding the premises.

Two large Underwriter Pumps, one built by the George F. Blake Manufacturing Co., and the other by Henry R. Worthington, have recently been placed on the premises, both of which are fitted with 12" suctions for the purpose of taking water from Stony Brook, and are also connected with the city mains. Each of these pumps is guaranteed to deliver 1000 gallons of water per minute when run at ordinary speed under 80 pounds steam pressure, and at an increased speed will deliver about twenty-five per cent. more. Four 1½ inch streams can be taken from each pump at the same time, and at 80 pounds steam pressure each of these streams is as powerful as one thrown by an ordinary first-class steam fire engine. When desired several streams can be siamesed together and made to throw one enormous stream.

Outside stand pipes, fitted with valves for hose connections, have been erected on the yard sides of all of the factory buildings. Stand pipes supplied with city water are located in all of the rooms, each with an ample supply of fire hose attached ready for immediate use, while a large supply of hose is always kept on hand for use in connection with the two fire pumps. Iron ladders reaching from the ground to the roof and with landings at each story have been erected at the side of each outside stand pipe, enabling the firemen to easily gain access to any part of the buildings and fight the most stubborn fire wherever located. The factories are fitted with 2000 of the latest improved automatic sprinklers, and fire alarm boxes are located in the principal work-rooms in addition to a special box of the Boston Fire Department on the premises. A small but well equipped fire department composed of employees of the company is carefully and regularly drilled and it is thought that if the fire fiend ever does invade the Boston Belting Company's premises he will be accorded a reception that will make his visit short and far from disastrous.

IT IS PROBABLY OZOKERITE.

AN Oregon paper gives the following account of a beeswax mine in that country: No one has ever been able to give an authentic account of how such enormous quantities of beeswax came to be deposited on the beach near Nehalem. Specimens are found along the beach in various places, but it is most plentiful near the mouth of the Nehalem. As the sea shifts the bars pieces of it are washed ashore, and large quantities are found by plowing in some of the low land near the beach. There are spots where the sea never reached in the memory of the oldest settlers' and which are covered with a good-sized growth of spruce, where deposits of wax may be found by digging. Specimens of the wax may be found at the house of any settler on the beach, and to all appearance it is genuine beeswax. Several tons have been unearthed, and one man shipped a large amount to San Francisco once, for which he received $500. In quality it is good as any in the market, and has retained its familiar odor through all its rough usage and age. It is supposed by some, and so stated, that it came from a wreck of a Spanish vessel over a century ago. Others say it came from a wrecked Chinese junk. These traditions in regard to the wrecks come from the Indians and are not reliable. It is possible that this beeswax is really "lost treasure" which people are digging for on the Nehalem.

MR. J. THOMAS ROBINSON.

MR. J. T. ROBINSON, General Manager of the Monarch Rubber Co. a concern that is making quite a record for itself as being the only large rubber factory that devotes itself exclusively to proofing, was born in Manchester, England, in 1860. He was educated in the public schools and while still little more than a boy went to work at David Mosely's rubber factory and later worked for Charles Macintosh & Co., later still working at the Silvertown Rubber Works. With the idea that a young man who knew something of the manufacture of India-rubber goods could better himself in the United States, he came here and obtained employment with the Goodyear Rubber Co., at Middletown, Ct., and later was transferred to the works of the Union Rubber Works, then situated at Harlem. He imported and started up the first English spreader that was ever used in the United States. At the termination of his contract with the Union Rubber Works he accepted a position with the Standard Rubber Co. as superintendent and was with them for a number of years. Later he interested capitalists in Brockton and formed the Monarch Rubber Co. starting a small plant on Brookside avenue, Campello, which is a thrifty suburb of the well-known shoe town of Brockton. This company was so successful that the plant has been enlarged a number of times until now they have a capacity for proofing six thousand yards daily. Mr. Robinson is in every respect a practical man and has designed numbers of machines that enable him to do his work with a minimum amount of labor and with great speed. The president of the corporation is William Rapp, and treasurer, Z. C. Keith. The manufacturing details and the selling fall however, entirely on Mr. Robinson.

ANOTHER GIFT FROM MR. CONVERSE.

AT the annual meeting of the Malden (Mass.) City Hospital corporation on the evening of May 1 a communication was received from the Hon. Elisha S. Converse, president of the corporation, enclosing his check for $50,000, the money to be devoted to paying the running expenses of the institution. Mr. Converse had already given the corporation the land that the hospital is built upon. He also gave $30,000 toward erecting the hospital building and gave $10,000 toward a new building for the nurses that has just been completed.

A NEW rubber manufactory that has been experimenting with Balata found that its calender rolls were so scored by that intractable gum that it necessitated long and careful regrinding.

TALKS ON RUBBERS IN THE SHOE TRADE.

SOME expressions from members of the shoe trade with regard to rubber footwear collected by a representative of THE INDIA RUBBER WORLD, are offered here as being likely to interest rubber-manufacturers. At the extensive retail store of H. C. F. Koch & Co., on One Hundred and Twenty-fifth street, New York, the buyer for their shoe department, Mr. William J. Wright, Jr., said: "During my twenty-three years' experience as a buyer for large houses or in the shoe business on my own account, I have never before had such bad luck with rubbers as during the season just closed. We have bought the best rubbers that are known to us, selecting grades which in the past have given the best service. Yet they have cracked at the sides of the foot and crinkled across the toe, and given way at the ball of the foot as I have never seen them do before. Besides, the varnish on these rubbers has not preserved its gloss as heretofore. As for the cause, I think that the claim that these troubles are due to the lightening of the goods to meet the popular demand is only partly true. Of course a very light shoe will not stand the same wear as a heavier one, all things else being equal, but the shoes now sold are not too light if sufficiently good materials were used. It will not excuse the manufacturers to say that they have cheapened rubbers as compared with old-time prices. If their figures are too low, or have ever been so, it has been their own fault. People do not complain of the prices of rubber footwear so long as they get the worth of their money. A woman's shoe costing us 44 cents per pair we sell for 49 cents, but if the manufacturers charged us so much that we should have to mark the same goods at 75 cents, we should sell the same amount of goods, provided the quality was right. I have sold these shoes at 75 cents, and with fewer complaints to attend to than we now have. Personally I don't believe in low prices as a means of helping trade. Our good times always come with rising markets—with higher prices.

"It is no slight matter to have complaints made about the goods we sell, and we never let a customer remain unsatisfied if it can be helped. Last winter I heard, accidentally, that three good customers of our store, in one family, had decided to buy nothing more from us, but to go elsewhere. I made an opportunity to see them, and found that the whole trouble was that they had bought some rubbers from us which fell to pieces with very little wear. Fortunately I was able to make a satisfactory explanation. It may seem a trifling excuse, but I have no doubt that we permanently lost several desirable customers during the winter for no other reason than that we sold rubbers that failed to please. Mind you, we don't know of any brands of rubbers better than those we handle. Several hundred complaints reached us during the season; there must have been many more that never reached us, and in these cases, of course, we had no opportunity to explain anything."

Mr. Andrew Alexander, a dealer in shoes at Sixth avenue and Twenty-third street, who has been in business since 1857, had a different experience to relate. "My salesmen," he said, "have not reported any unusual features in our business in rubbers for the past season. We make it a point to keep good rubbers in stock, and we insist upon the importance of our customers being well fitted before they leave our store. We have signs permanently displayed, suggesting that heavy shoes should be bought for heavy wear, and our salesmen try to see to it that customers get the right kind of shoes—in rubber as well as leather. We are seldom called upon to replace rubbers, but we do it cheerfully if there is any just cause. But last winter one of our old customers came in and bought a pair of rubbers which I thought fitted him too closely, and I told him so. He insisted upon taking them, however, and the next day he came back for a new pair because they were torn. It was so clearly the buyer's fault that I declined to replace the rubbers, and when he threatened to transfer his custom to another store I answered that I would rather have him do so than break my rule never to replace any article which had left my store in proper condition."

Mr. George F. Bates, in charge of the shoe department of Bloomingdale Brothers, at Third avenue and Fifty-ninth street, said: "After our experience of the past season, I must say that, the better rubber shoes are made, the poorer service they appear to give. I mean that the light, neat-appearing, and well-fitting shoes now turned out by the leading makers don't wear as well as the goods we used to buy. I have been a buyer for large houses for many years, and it is my deliberate opinion that first-grade rubbers today are not up to the old standard. One thing that may be mentioned is that they split in the sides, which was not always the case. I don't undertake to say what the reason is. We have no complaint to make about the general range of prices, especially as some irregularities in the list have been corrected since last season. Rubber shoes on the whole are cheap enough. The public would demand cheaper goods, no matter how low prices might be, and they bought readily at prevailing figures during the past season because rubber shoes are a necessity, and the prices were reasonable. We sell twenty pairs of ladies' rubbers to one of men's, and naturally the greater number of the complaints that reach us come from women."

* * *

THE remarks which follow are from shoe-retailers on upper Third avenue:

John M. Adler—The increased prices for rubber shoes have been a good thing. We are getting better goods than ever before. Manufacturers are charging enough to enable them to supply a good quality, and cheap rubbers are disappearing from the market. The department-stores are cutting somewhat into our trade, by selling rubbers at cost or below, but we believe that there will always be

room for the exclusively shoe store. We like to handle rubbers because a pair can be sold in a half-minute where a pair of leather shoes would take a much longer time. We can turn over our money much quicker when it is invested in rubbers, and we regard it as a valuable feature of our trade. We sell more rubbers to women. Men rush in for rubbers so long as a storm is on, and stop buying as soon as it stops, while the women continue buying as long as there is snow on the ground.

G. G. Nolan—Time was when there was a good profit in handling rubbers, but there is not now. I have sold men's arctics at $3 a pair. I believe in sticking to leather goods, and would like to see rubbers abolished in shoe-stores. They are a great deal of trouble, but we have to keep them because our customers demand them. It would not help any for the manufacturers to reduce prices; if rubbers were offered at 15 cents plenty of people would want them for 9 cents.

Mark Nathan—In eight years at this stand we have never handled such poor rubber goods as during the past winter. They have cracked at the sides and across the toes, and the heels have dropped off. We have bought first grades from the leading jobbers in town, and yet have had the worst kind of luck in having rubbers returned to us. Many of these have been put aside to be sold for scrap. The shoes look well, but they don't wear; I don't believe there's any rubber in them. If we can't do better hereafter we'll try imported rubbers.

Mrs. James Kilpatrick—I assisted my husband in the shoe business for twenty years, when he was alive, and have continued it alone for three years. Rubber shoes don't seem to me to give as much satisfaction now as formerly. Well-dressed men come in and ask for rubbers for 50 cents, and as we don't sell any cheap grades they sometimes go away, saying that is all they have to pay elsewhere. The department-stores have cut into our trade in rubbers a good deal. It doesn't make so much difference what prices are, except for this cutting under by our competitors; buyers would complain of prices no matter how low they were.

James McPhial—We sell nothing but first-class goods and hear no complaints from our customers. Prices are all right.

William Segger—I would like to see the business in such shape that the manufacturer could say to any dealer, "These rubbers must not be sold under list prices." I don't suppose that could be done, but it is no more than fair that some protection should be given to the retail shoe-dealer against the department stores, which sometimes sell goods at cost for an advertisement. Then all our customers who hear of it think we are cheating them if we try to charge any sort of profit on our goods.

* * *

WILLIAM MORSE, the Reade-street (New York) rubber jobber, when the subject of the above interviews was mentioned to him, said:

"Our books show an unusual number of complaints from buyers of rubber shoes during the past season, but in the case of every complaint that seemed well-founded we replaced the goods, so that the retailers lost nothing. The real loss fell upon the manufacturers. There has been all the while a constant effort on the part of the rubber-shoe makers to improve their output of goods, and as far as possible, to cater to the public taste. It sometimes happens that, in experimenting, temporary inconvenience may be caused to the buyers of their goods, though the result of the experiments, in the end, may be for the good of all concerned.

"In this case the fact is that many of last season's goods were made, in compliance with the general demand for neat-appearing shoes, with a different connection between soles and uppers, leaving out a narrow strip of cotton duck which the manufacturers call 'piping.' The result was a distinct gain in the point of appearance, but, on the other hand, there was an unusual amount of splitting at the sides. By the way, the piping formerly used was not always satisfactory. But the manufacturers, after the experiences of the winter, have restored this piping as a component part of the women's rubbers—and the other styles from which it had been omitted—and they have adopted a new method of cutting and adjusting it to the other parts of the shoe. Besides, material of a better quality has been secured for the piping.

"Altogether, therefore, I believe that the cause for such complaints as were received last season will not exist this year at all. The manufacturers fared alike last year, the same trouble being felt all around. I believe that this season they are putting out shoes that will wear well, while being even more attractive in appearance than ever before."

CAN MAKE RUBBER FROM COTTONSEED-OIL.

MR. C. B. WARRAND, of Savannah, Ga., who wrote about the manufacture of rubber from cottonseed-oil in the *Manufacturers' Record* some months ago, writes again as follows on the same subject:

"The Elastic Product Co. has turned its whole establishment in only partly oxidizing the cottonseed-oil and making varnish of it. As I wrote in the article about cottonseed-oil rubber, the rubber trust bought the secret from an English inventor some six years ago, and its works steadily make its own cottonseed-oil-rubber product at a cost of about seven cents per pound. The varnish made by the Elastic Company sells well and is as good as linseed-oil varnish. I know the secret how to make the rubber from cottonseed-oil through my own researches, but it is of no value in the United States as the rubber trust is the only purchaser of this kind of product, and the only patentable feature is an apparatus which has been patented in the United States. The whole process is very simple, and if I was assured of the sale of the product I could establish a plant for the manufacture here and keep the process secret, or, if desired to manufacture it in Europe, I would sell the secret."

Like Mr. Warrand's preceding articles on the same subject, the above is incomplete in that he fails to say whom he means by the rubber trust.

THE National India Rubber Co. (Bristol, R. I.) had a contract awarded to them recently for 6000 pairs of snow-excluder overshoes for the United States army.

THE MITCHELL PATENTS NOT INFRINGED UPON.

SINCE the last issue of THE INDIA RUBBER WORLD a decision has been rendered by Judge Dallas, of the United States circuit court, in the patent-infringement suit of the Chemical Rubber Co. *v.* the Raymond Rubber Co. *et al.* Having already devoted considerable space to the points at issue in this cause, we now give the decision in full, as a contribution of interest and value to the history of rubber-reclaiming and of the litigation so long pending with regard to processes. The decision follows:

Of the several letters patent mentioned in the bill, two only are now relied upon, viz.: Patent No. 300,720, dated June 17th, 1884 (application filed May 5, 1881), to N. Chapman Mitchell for recovering rubber from waste; and Patent No. 249,970, dated November 21, 1881 (application filed May 19, 1881), to the same patentees, for recovering rubber from rubber waste. It is insisted that all the claims of these two patents have been infringed by the defendants.

Patent No. 300,720 expressly embraced muriatic acid as well as sulphuric acid, but by disclaimer filed on Jan. 8, 1894, all mention of muriatic acid was omitted. Waiving, as not material to my consideration of the case, the objection which has been urged against this disclaimer, the claims may be stated in conformity therewith, as follows:

1. As an improvement in the art of treating rubber waste for the recovery of the rubber therefrom, boiling said waste in sulphuric acid of a strength sufficient to eliminate and destroy the fibrous material with which the waste is combined, substantially as set forth.

2. The within described process of eliminating woolen fiber from rubber waste containing the same, said mode consisting in boiling the waste in sulphuric, or equivalent acid of sufficient strength to eliminate said woolen fibers as set forth.

3. As an improvement in the art of treating rubber waste for the recovery of rubber therefrom, the process herein described, said process consisting first in boiling the waste in strong sulphuric acid, and then washing the mass resulting from the acid treatment, all substantially as set forth.

The only claim of Patent No. 349,970 is as follows:

"As an improvement in recovering rubber from rubber waste wherein the rubber waste is boiled in strong sulphuric or muriatic acid, the process of bringing such acid into immediate contact with all portions of the mass, which consists in injecting steam into the strong acid in the tank containing the mass, whereby the steam penetrates every portion of the mass and carries the acid with it as specified."

Several questions have been very ably argued by counsel which it is not necessary for me to discuss, for upon that one of them to which attention has been chiefly directed, I have reached a decision which is decisive. What significance is to be ascribed to the words "of a strength *sufficient*," "of *sufficient* strength," and "*strong* sulphuric acid," as they occur in the claims of Patent No. 300,730; and to the words "*strong* sulphuric or muriatic acid," as contained in the claims of Patent No. 349,270. This inquiry is of controlling importance, because, unless the phrases quoted are to be so interpreted as to include sulphuric acid when very substantially diluted, the defendants have, unquestionably, not infringed. Much stress has been laid upon the fact that the defendants' expert has said that "it is, of course, true that if the claims be read without reference to the specifications of the patent, they may fairly be considered to be concise descriptions of the process used by the defendants." This witness assumed, however, that the claims should be read in connection with the specifications and was of opinion that, being so read, they "should all be understood to refer to the use of very strong acid." And in this I entirely agree with him. It may be conceded that the defendants used acid of sufficient strength and, consequently, that what they do is concisely described in the claims; but still the fact remains that the claims themselves neither indicate what strength of acid *is* sufficient, nor define what is meant by strong acid. Upon this most material point they supply no information whatever, and consequently a reference to the specifications, which as to this matter is the same in both patents, is, of necessity, invited for such "exact description" of the invention as is requisite to enable any person skilled in the art to use the same (Revised Statutes, Sec. 4888); and that such reference was contemplated by the patentee himself is made quite apparent by the circumstance that in the specifications the information which the claims do not furnish is fully given. The specification states that subjecting the waste to the action of heated solution of caustic alkali or diluted sulphuric acid has been found to be valueless; but that the patentee has discovered "that the rubber in the waste will effectually resist the action of strong sulphuric acid heated to a high temperature." Thus we have strong acid opposed to, and contrasted with, diluted acid, and the natural deduction would seem to be that no acid which is substantially diluted can be the strong acid of the patent. Further on, it is said, that "the strength of the acid and the quantity employed in respect to the quantity of material treated, will depend upon the proportion of fiber and impurities in the waste." This, of course, suggests that where, but only there, less than the usual proportion of fiber is present, a weaker acid may be used, but this may mean that, under such circumstances the inherently weaker acid—muriatic as compared with sulphuric—can be relied upon; and be this as it may, it plainly appears from what is further said in the same connection that "wherever the ordinary proportion of fiber is to be dealt with, sulphuric acid of practically the full strength of 60° Baume, which the patentee said he had used in practice, must be employed, and that even to such acid" about one-twentieth of its weight of fluoric "a stronger acid" may be advantageously added, "to facilitate the operation." From these statements, it is, I think, manifest that the sulphuric acid which the patentee intended to be used in the practice of his process is the strong sulphuric acid of commerce. But it is contended that even if the acid is, at the outset, to be diluted, yet the instructions of the patent involve its dilution in pursuing the process. This contention, however, is in conflict with the terms of the specification. Its requirement that the acid shall, in the first instance, be of practically full strength, is not more clear than the direction that it shall remain so. "In carrying out my invention," says the specification, "the acid is first deposited in the bottom of a tank or vat, into which the waste is then introduced, and the tank or vat closed." There can be no question as to the meaning of this language; and the procedure which it describes is so absolutely and unqualifiedly enjoined as to forbid an implication that it may be departed from or varied. No water is to be placed in the tank before the acid is put into it, for the acid is "*first* deposited" no water is to be added before the introduction of the waste, for, having deposited the acid, the waste is "*then* introduced"; and water is not to be afterward added, for, upon the introduction of the waste, the tank is "*closed*," and, as the specification continues, "the acid is *then* heated" and the treatment proceeds to its conclusion.

Furthermore, we are told that the invention "is based upon the discovery that the rubber in the waste will effectually resist the action of *strong* sulphuric or muriatic acid heated to a high temperature"; and this is said with reference to a French patent (to Faure, No. 91,655, dated April 3, 1871), which calls for "sulphuric acid indicating 53 degrees Baum," which, though not quite of the strength which the patentee says that in practice he has used, is still a very strong acid. But, says the patent in suit, "sulphuric acid, however, if employed at ordinary temperatures or at any of the temperatures set forth or suggested by Faure, acts injuriously upon the rubber." The conclusion seems to be inevitable that Mitchell's invention, as he understood it, and intended that others should understand it, rested upon his alleged discovery that sulphuric acid of the same strength as suggested by Faure, or even of greater strength might be used, when heated as Mitchell proposed it should be; and, in the patent No. 249,970, it is especially mentioned, evidently as showing that the injection of steam "into the strong acid in the tank" would have no harmful effect, that "there can be no appreciable dilution of the acid by condensing steam." Throughout, and in both patents, it is made apparent, not only that dilution of the acid was not intended, but that any appreciable dilution of it would be inadmissable; and I am unable to accept the theory set up for the plaintiff that a man of competent skill in carrying out the process would, of course, assume that a considerable quantity of water was to be added to the specific contents of the tank. This theory has been vigorously supported by the experts for the complainant, and has been with equal emphasis combatted by the expert for the defendants. I have read their testimony with care but need not refer to it in detail. It is sufficient to say that the patent is not simply silent on the subject of adding water, but, upon the natural and reasonable understanding of its terms, it positively precludes the addition of water. The necessity for adding water could be learned only by independent experiments of a nature, not really unwarranted, but which could not be conducted except in direct defiance of the directions of the specification. In short, I am convinced that any man, however skilled, who would undertake to practice the patented process, would necessarily be led, by its terms, to take the view of it which was urged upon the patent office by the solicitor of the patentee, viz.: that it "*involves* the subjection of the rubber waste to boiling in a *strong undiluted commercial acid*," and that, therefore, the use of acid *and water* would be a material departure from it. It is objected to this construction of the patents that it renders them valueless, and the intention as claimed impracticable; but as no other construction can, in my opinion, be reasonably put upon them, any consequence which results however serious, must be regarded as unavoidable. As "the language of the specification and claims show clearly what he desired to secure as a monopoly, nothing can be held to be an infringement which does not fall within the terms, the patentee has himself chosen to express his invention." [McClain vs. Ortmayer, 141 U. S., 419 (425).]

The other matters which have been set up in defense do not call for discussion. If the patents are to be limited as I have indicated the charge of infringement is without foundation; and, upon this ground, the bill is dismissed.

ANNUAL MEETING OF THE UNITED STATES RUBBER COMPANY.

THE third annual meeting of stockholders of the United States Rubber Co. was held at noon on Tuesday, May 21, in the company's office at New Brunswick, N. J. About sixty stockholders were present, representing nearly 300,000 shares out of a total of 395,665. The meeting was presided over by the president, Joseph Banigan.

In submitting his report on the operations of the company for the year ending April 1, the president offered a recommendation that the manufacture of the company's goods be concentrated in the four principal factories. He believed that by such a course the profits of the company, on the basis of last year's business, might be increased to $4,500,000. No action on this plan was taken at the meeting. It has been suggested that probably too many of the stockholders are interested in the smaller factories, which would be closed under such a plan, for a three-fourths vote to be obtained in favor of it.

Charles R. Flint, treasurer of the company, submitted a statement of the financial condition of the company on the first day of April, 1895:

ASSETS.

Cash	$ 119,900.99	
Notes and accounts receivable	974,130.62	
Merchandise on hand	781,722.23	
Investments	38,677,108.79	
		$40,552,862.63

LIABILITIES.

Preferred stock	$19,400,500.00	
Common stock	20,166,000.00	
Accounts payable	110,144.75	
		$39,676,644.75
Surplus		$876,217.88

The above surplus compares with $246,923 on April 1, 1894. There was an increase from $576,095 to $974,130 in bills receivable and a decrease from $1,156,498 to $781,722 in merchandise on hand.

Treasurer Flint reported, in addition, net earnings on the above investments in the stocks of other companies for the fiscal year amounting to $3,008,840.21. Deducting from this sum the full 8 per cent. dividend on the preferred stock (=$1,552,040) and 5 per cent. for the common stock for the whole year (=$1,008,300), there remains $448,500.21.

The election for directors resulted in the choice of the following, the list differing from that of last year only in the substitution of Heman Burr for Charles H. Dalton, of Boston:

1. CHARLES A. COFFIN, Boston, Mass.
2. SAMUEL P. COLT, Providence, R. I.
3. JOSEPH BANIGAN, Providence, R. I.
4. ROBERT D. EVANS, Boston, Mass.
5. JAMES B. FORD, New York.
6. CHARLES R. FLINT, New York.
7. J. HOWARD FORD, New York.
8. ROBERT M. GALLAWAY, New York.
9. WILLIAM H. HILL, Boston, Mass.
10. HENRY L. HOTCHKISS, New Haven, Conn.

11. H. B. HOLLINS, New York City.
12. GEORGE H. HOOD, Boston, Mass.
13. CHARLES L. JOHNSON, New Haven, Conn.
14. JAMES P. LANGDON, New Brunswick, N. J.
15. GEORGE A. LEWIS, Naugatuck, Conn.
16. EDWIN A. LEWIS, Brooklyn, N. Y.
17. MAHLON C. MARTIN, New Brunswick, N. J.
18. FREDERICK M. SHEPARD, Orange, N. J.
19. HEMAN BURR, New York.
20. GEORGE M. ALLERTON, Waterbury, Conn.
21. WILLIAM L. TRENHOLM, New York.
22. W. S. BALLOU, Providence, R. I.
23. JOHN J. BANIGAN, Providence, R. I.
24. SAMUEL N. WILLIAMS, Williamsport, Pa.
25. GEORGE WATKINSON, Providence, R. I.

The stockholders approved of the amendments to the by laws of the company suggested by the directors. It is provided that the by-laws shall not be amended or repealed hereafter except by vote of a majority of common stock as well as a majority of the preferred stock. Another amendment provides that preferred dividends shall be payable January 15 and July 15, and that dividends on the common stock shall be payable on the first Wednesday in June and in December. Another provides that no sale of real estate belonging to the company, or sale or pledge of any shares of capital stock of any corporation owned by the United States Rubber Co., shall be made, and no bonded or mortgage debt shall be created, unless first assented to by holders of at least three-fourths of both the general and the preferred stock.

The first meeting of the newly-elected directors was held at the office of the United States Rubber Co, No. 90 Reade street, at 10 A. M., on May 29, twenty-four membesr of the board being present. The old officers were unanimously elected, as follows:

JOSEPH BANIGAN, president.
ROBERT D. EVANS, first vice-president.
JAMES B. FORD, second vice-president.
CHARLES R. FLINT, treasurer.
MAHLON C. MARTIN, assistant treasurer.
CHARLES L. JOHNSON, secretary.

The following executive committee was elected: Joseph Banigan [chairman], Robert D. Evans, Charles R. Flint, Samuel P. Colt, Henry L. Hotchkiss, M. C. Martin, and George A. Lewis.

It was moved that the regular meetings of the board be held on the first Wednesday of every month at 2 P. M., at the principal office of the company in New York. It is expected that at the next meeting of the directors, on June 8, the semi-annual dividend of 4 per cent. on the preferred stock and of 2½ per cent. on the common stock will be declared.

Charles L. Johnson, director of sales, states that in consequence of the large consumption of rubber boots and shoes last season, which had the effect of clearing out of stocks in the hands of retailers, and the advance in prices to take effect in September, large orders are now being placed with manufactories for goods for the coming season.

NEW TRADE PUBLICATIONS.

A CATALOGUE for 1895–96 printed in red and gold with tinted cover of parchmentized paper, the half-tone cuts showing types of footwear that are to-day popular, has just been received. A pleasant feature of this catalogue is the beautiful sketches in color that it contains. There are twelve of these and all of them are works of art. They give to the reader not only a glimpse of the fashionable beauty as she put on her "Storm Slippers," but show the weather-beaten fisherman in storm boots, the hunter in sporting boots, the lumberman in the depths of the woods wearing bootees, the boulevard swell in his piccadilly-toed rubbers, and the fashionable Newport beauty with her dainty summer shoes, rubber clad. The booklet is really a singularly attractive work of art and reflects credit upon its publishers, the Boston Rubber Shoe Co.

—A very neat garden hose catalogue, showing rubber hose, cotton garden hose, couplings, hose pipes, menders, sprinklers and reels, is that issued by the Boston Belting Co., Boston, Mass. In its sixteen pages it gives one all necessary information regarding these very timely topics.

—The "Bell Brand" goods in boots and shoes for 1895 are brought to the attention of buyers by means of an exceedingly beautiful illustrated catalogue. The cover is printed in blue and gold and adorned with a string of bells that have every appearance of ringing most joyously. The catalogue contains some sixty pages and is fully illustrated with handsome half-tone cuts showing all the styles of boots and shoes that the market to-day affords. The pamphlet has fifty-eight illustrations and is published by the Boston Rubber Co., Boston, Mass.

—A new catalogue of rubber mats and-fire hose has been issued by the Gutta Percha and Rubber Manufacturing Co. (No. 35 Warren street, New York). It contains a number of illustrations showing patterns of their mats, which are offered to the trade as being without a superior for artistic design and beauty of finish. Prices are given of all the goods described.

—The manufacturers of pneumatic tires no longer attempt concealment of their methods of construction, but have brought out catalogues written with the utmost care to make plain the details of their work. One who will collect these various catalogues will have a good library on tire-manufacture. A little book which should not be overlooked in this connection is entitled "Remarks Concerning the Palmer Pneumatic Tire," and comes from the Palmer Pneumatic Tire Co., Chicago, Ill.

—For the spring of 1895 a supplement to the regular price-list of Tyrian rubber goods has been issued. It shows both new goods and changes from catalogue for 1894. The supplement is a ten-page pamphlet showing various styles of Tyrian seamless nipples, pessaries, stomach tubes, syringes, atomizers, Homestead water-bottles, and the Homestead combination fountain syringe and hot-water bottle. These goods are nicely illustrated and well described. Published by the Tyer Rubber Co., Andover, Mass.

—India-rubber forms a large element in the trade of W. D. Allen & Co. (No. 151 Lake street, Chicago), whose sixth catalogue of belting and rubber goods is a book of 240 pages. It is one of the latest catalogues out, bearing the date of March 15. The firm have the western agency of the New York Belting and Packing Co., Limited, and have catalogued their leading lines, together with some articles from other leading rubber houses. But Messrs. Allen & Co. make a specialty of belting and hose, and they handle all sorts of accessories, such as pulleys for the former and couplings and reels for the latter. Eighteen pages of the catalogue are devoted to the various kinds of asbestos goods—including roofing—which are coming into use in such large volume. It is a catalogue which will interest most people in the rubber trade.

—The Morgan & Wright (Chicago) tire catalogue for 1895 contains much well-arranged information regarding their pro duct, together with the care of bicycle-tires in general, including repairs. They express the belief that "the day will not be far distant when a pneumatic tire will never need to be taken

from the rim for repairs, or until it is worn out." The catalogue says: "Morgan & Wright never used linen in a tire. We had made experiments years before and discovered that linen was 'no good' in connection with vulcanized rubber." Eleven styles of tires are listed, all of them in two or three sizes, at either $10 or $12 per pair. There is a special new track tire, weighing only 14 ounces, which is listed at $25. The following statistics are given of the number of Morgan & Wright tires exhibited at the late Chicago and New York cycle-shows:

	Chicago.	New York.
Number of exhibitors	61	49
Number of wheels shown	555	465
Number with tires supplied by the wheelmakers	48	59
Number with M. & W. tires	252	167
Number with other tires	255	239

The number of different tires exhibited at each show is given as twenty-four.

—The 1895 Price-List of the Elastic Tip Co. (Boston), manufacturers and importers and jobbers of rubber goods and bicycle-supplies, contains 100 pages. The business of selling bicycle parts is becoming very large in this country, as it is abroad, and the Elastic Tip Co. carry a full line of goods of this class. They make a specialty of rubber tires, of all the leading types, and devote a few pages to solid and cushion tires. There is yet some demand for the latter on bicycles, but perhaps they are in larger demand for heavier vehicles. Rubber pedals and bicycle-handles are also listed in large variety, together with valve-stems and several kinds of tire-pumps.

—William Morse & Co., rubber jobbers of New York, have gotten out for the spring trade a handsome price-list of mackintoshes and rubber clothing, from the factories of the American Rubber Co. It is a well-filled pamphlet of 24 pages. A pleasing feature is the successful use of "half-tone" engravings in illustrating the styles of ladies' garments. The firm are at No. 72 Reade street.

—A large catalogue of athletic and sporting goods has been issued by the Overman Wheel Co. (Chicopee Falls, Mass.), the widely-known manufacturers of "Victor" bicycles. The factories of this firm are very large and singularly complete in their appliances for bicycle-construction, including the manufacture of pneumatic tires. In undertaking the athletic goods business they say, through their catalogue: "We have an advantage which it is well not to overlook—we manufacture all our rubber goods. The importance of good rubber in baseballs, tennis-balls, etc., is at once apparent. The superiority of our baseball is largely due to the fact that we prepare the rubber exactly as we want it, and are not dependent on others for it. Our golf-balls, our football and striking-ball bladders we make in our own rubber factory." The new products are branded "Victor" athletic goods, that name, applied to the bicycle, having become so favorably known as to serve as a valuable trade mark. Judging from the variety of goods listed in this catalogue, the Overman Wheel Co. seem likely to become large manufacturers of rubber. Their New York address is No. 23 Warren street.

—"How to be Happy Though a Druggist" is filled with pertinent hints about offering the right goods to the public at the right time. The value of such knowledge is not to be overlooked, for "there are occasional spells when a perverse public will take a streak of being well, and the prescription business grows torpid." By the way, the "right goods" are shown to be, in the end, those of the Goodrich lines.

—The United Rubber Co. (Linburg, Sickel & Co.), of Trenton, N. J., send us a catalogue of rubber belting, hose, tubing, and mechanical rubber goods in general. A separate list gives more details in regard to their brewers' hose; also, rubber wheels for brewers' keg-washing machines, and a rubber packing specially made to resist the action of ammonia, in ice-machines.

—"Seamless-Tube Hose" is the title of a neat little book in which is set forth in verse—including rhyming which is unique—the merits of hose of this type as compared with all others. It is published by the Cleveland Rubber Works of the Mechanical Rubber Co., Cleveland, Ohio.

—"Martha and John" is the title of a tail-of-the-century Indian-summer romance by the professor of advertising who is doing so much to make Akron, Ohio, known to the world. It is an intensely moral story, and the moral is that The Goodrich Hard Rubber Co.'s syringes are good things for druggists to keep in stock.

CATALOGUES RECEIVED.

Nicholson File Co., Providence, R. I.=Illustrations of Files, Rasps, and Tools. 60 p.

Montgomery Bros., Philadelphia, Pa.=Circulars of Hose Department and Packing Department. Each 6 p.

The Rubber Tire Wheel Co., Springfield, Ohio.="Have a Comfortable Ride?" 12 p. [Illustrations of carriages with the new tire.]

Indianapolis Rubber Co., Indianapolis, Ind.=High Grade Pneumatic Tires. 16 p. Rubber Mats. 4 p.

The Goodrich Hard Rubber Co., Akron, Ohio.=Hard-Rubber Electrical Sundries. 4 p.

The Adams & Westlake Co., Chicago. = The "Acme" Hose-Coupler. 4 p., besides Leaflets.

New Jersey Carspring and Rubber Co., Jersey City, N. J.="A Strange Harvesting." 8 p. [An account of rubber-gathering in Brazil.]

RUBBER SUNDRIES FOR BICYCLES.

THE New York Belting and Packing Co., Limited, put up for repairers and dealers what they call "friction cloth"—a strong canvas, gum-solutioned on one side, in strips four inches wide, for tire-patching.

—The imports of India-rubber and Gutta-Percha cements for bicycles for the last fiscal year of the United States were valued at $17,800, of which $7731 worth came from Germany and $4069 from Great Britain.

—The company who supply the Pope Manufacturing Co. with fabrics for their tires are said to keep thirty-two looms running for their needs.

—A. Straus, of the Newton Rubber Works, has applied for a patent on a new plug for repairing single-tube tires, intended to cover the puncture both outside and inside the tire.

—The track tire listed by Morgan & Wright at $25 weighs only twelve ounces and is entirely handmade.

—It is all well enough to talk of two-minute repairs to bicycle-tires, says a writer in the *American Cyclist*, but these exist chiefly in the imagination. The solution takes more than two minutes to be dry enough to allow the patch to be affixed to the air-tube, for it is useless to attempt a mend unless the solution has at the least become tacky.

—The Indiana Bicycle Co.'s (Indianapolis) method of making their new hosepipe tire permits of the tires being vulcanized in open steam instead of in a mold.

—The Pope Manufacturing Co. (Hartford, Conn.) announce that the proportion of single-tube tires ordered for "Columbia" bicycles is and has been for some time more than 90 per cent.

—Charles E. Duryea, the tire inventor, is a firm believer in the utility of the pneumatic-tired motor carriage. Another five years, he writes, will see these vehicles in common use, and in a decade the horse will be little more than a curiosity.

NEW GOODS AND SPECIALTIES.

FEW in the rubber business realize the great demand that there is for weather strips, or how much rubber is used in this line of manufacture. As a matter of fact it is no uncommon occurrence for one factory to make four million feet of this article in a single year. Of the many varieties made most of them use India-rubber in some form. There is for example the wood and rubber parting strip especially adapted for windows. This consists of a hollow tube of rubber inserted in a groove which automatically seals the parting point between the upper and lower sash. This style is made up in twelve feet lengths and cut off by the dealer to suit the customer. The threshold strip consists of a strip of rubber put in a convex manner between two weather pieces, so that when the door closes the rubber fits snugly under the bottom and thus excludes rain, snow, cold and dust. Metallic strips as a rule are composed of zinc and rubber combined. They are very cheap and simple in construction, the rubber in tube form being fastened to a single piece of zinc bent so as to partially enclose it. For shipment the strips are packed in pasteboard tubes containing two hundred and fifty feet each. Some of the metallic strips are japanned and with these red rubber is used giving it a more attractive appearance. Another variation is the copper strip combined with red rubber.

THE LEAGUE TIRE.

THE inner tubes of tires of the cemented variety have usually been made in iron molds, and during vulcanization a strain was brought upon the fabric so great as to stretch and weaken it, the result being a loss of resiliency in the tire. The problem of producing a tire of greater resiliency is claimed to have been thoroughly solved in the production of the League tire. It is vulcanized by an improved process that prevents injury to the fabric;—there is no stretching, straining

or weakening during manufacture, and it has great resiliency coupled with extreme lightness, durability and strength. Another point due to the method of manufacture is the absence of any mold mark or fin on the tread, and a cloth impression surface on the under side next to the rim, to which the cement adheres better than to a smooth surface. The rubber and fabric are both of superior quality, and the workmanship of the best. The manufacturers claim that the tire shows a pliability never before seen in a pneumatic. Manufactured by New York Belting & Packing Co., Ltd., New York.

THE LLOYD WINDOW-BRUSH HANDLE.

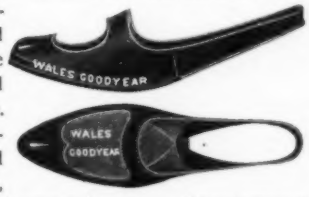
AN apparatus widely used in connection with garden hose is the Lloyd window-brush handle. This handle is grooved from the bottom to within three inches of the brush end, and a tube is laid in the groove its full length, leaving the handle at its end. The tube then bends over the back of the brush and ends n a fan. On the lower end of the handle a valve is put which will fit any ordinary garden hose. In use the water is simply turned on, the supply being regulated by the valve. The water passes through the tube, strikes the fan, is thrown in a sheet on the brush, which spreads it over the window and over the brush. When used in rinsing the brush is simply held away from the window giving a stream of clear water. The handle is adapted for store, office, residence, and railroad car washing, and is having a very large sale. Henry F. Knowles, sole agent, 49 Federal street, Boston.

PHOENIX RUBBER INSULATING PAINT.

THIS rubber paint is manufactured from a newly discovered mineral, that from analysis is extremely similar to India-rubber. It is used for armatures, switch-boards, conduits, and all kinds of electrical appliances where a high insulation is desired. In use it is said to take a lasting gloss equal to that of varnish. It never cracks, blisters or peels, is not affected by any extremes of climate, and loses none of its properties under 550° to 600° F. It is also said to withstand the action of alkalies, acids or salines. Manufactured by Morris & Maccurdy, Indianapolis, Ind.

THE PICCADILLY TOE FOOT-HOLD.

HERETOFORE foot-holds both for men and women have been made with broad toes, the result being that they presented a very awkward appearance when worn over the pointed shoes that are now fashionable. The illustrations show the latest adaptation of the foot-hold to the fashionable pointed toe, and is made for both men's and women's shoes. Manufactured by Wales-Goodyear Rubber Co., 116 Bedford street, Boston.



A NON-SLIPPING SOLE AND HEEL.

A NEW invention for use either on leather or rubber boots is a non-slipping sole and heel made of rubber and canvas. The patent granted on it is largely for the method of manufacture, the rubber being first spread upon a sheet of canvas, then made up into a roll, the parts for sole and heel being cut from across the roll, so that the wearing surface shows alternate edges of rubber and fabric. It is said that both the heel, which is used for an ice-creeper, and the sole, have been fully tested and pronounced a decided success. The inventor, now that his patent is allowed wishes to negotiate with parties with a view of having his invention put upon the market on a royalty. The invention is said to be adaptable not only for rubber boots and shoes but to bicycle, tennis and sporting shoes. Patented by Herman Mayer, Bradford, Pa.

THE CANFIELD WATERPROOF STOCKINET BIBS.

THESE goods are made of a soft pliable fabric possessed of many advantages and specially prepared for this purpose. It is really a mackintoshed bib the fabric being a beautifully soft quality of stockinet. For children and for use in the sick room these bibs have been found to be almost indispensable. They are made in four sizes and manufactured by the Canfield Rubber Co., Bridgeport, Ct., D. C. Hall & Co. New York, Selling Agents.

CAPTIVE GOLF, OR "LINKA."

THE game of Linka offers splendid home practice to golfers, and gives all an opportunity of enjoying this popular and fashionable game, as any ordinary lawn will meet all the requirements for a full round of golf, according to any series of links they may decide upon before starting the game. The machine itself is of iron, about the size of an ordinary dinner plate, to which a captive golf ball is connected with rubber springs, and when struck in the ordinary way from a "tee," registers the

distance upon a dial which it would have traveled. The ball, however, only goes about two or three yards, and what is very important, does not fly back with any force. In this way players get from one hole to the next, and when sufficient distances have been registered to reach the "putting greens," Linka is then temporarily discarded, and loose balls are dropped on the lawn, at the required distances, and the players "hole out" as in ordinary golf. The rules of the game are simple and easily comprehended; besides, it offers a splendid opportunity to the golf player of becoming skilled at full shots, approaching and putting. For sale by Wright & Ditson, Boston, Mass.

PNEUMATIC HORSE COLLARS OF INDIA-RUBBER.

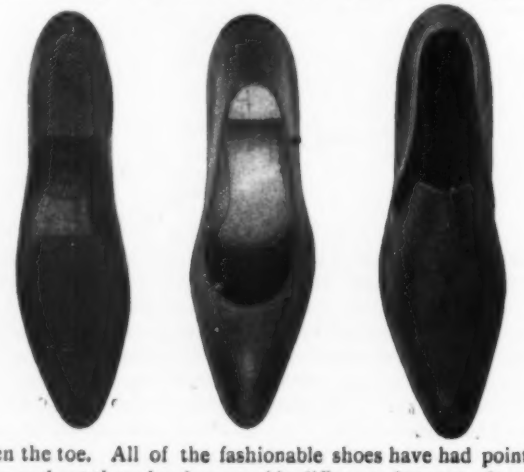
HORSES with sore shoulders will be a rarity, it is said, when the pneumatic horse collar comes into general use. It has been invented by a Londoner, and is being introduced in the leading European cities. The patent consists of the usual leather casing, but instead of being packed with a hard, non-yielding substance, the pneumatic principle is applied, a rubber air chamber being substituted for the packing, this in turn being covered with leather, and when the collar proper is inflated a flexible and yielding surface is presented to the horse's shoulders. It must be apparent to the most casual observer that the collar in present use must cause and give an immense amount of pain. Owing to the harsh padding it is impossible for the collar to adapt itself to the animal's shoulders, and, therefore, chafing and other ills ensue. With the pneumatic collar, as before stated, chafing is impossible, as, instead of the horse having to adapt itself to its collar, the collar adapts itself to the horse, the moment it is put on.

HARD-RUBBER FOUNTAIN PENS.

ONLY the best quality of hard rubber or vulcanite can be used in first-class fountain holders. It is perhaps not well known that there are scores of concerns that are really in the rubber business, inasmuch as they have lathes, polishing machines and such machinery for the manufacture of fountain pens, and in this business they have their own skilled help, and many times special machines. One style of fountain penholder for instance comprises five parts, the barrel, cap, nozzle or pen section, core with top feed and under feed. The rough stock for the barrel and cap looks not unlike a piece of small gas pipe, closed at one end, while that for the nozzle-core and feed, would pass for a piece of small iron rod with a very small hole running through it. These parts coming in the rough are put upon a lathe and brought to a smooth finish. The barrel is then rounded at the solid end to give accuracy in the tapering. It is then turned to the diameter desired, polished with pumice stone, cut off at the pen end to give a good joint, a place turned for the cap to fit on the solid end, and then stamped with the name and patent mark. The cap is then turned down to the diameter of the barrel used, then pumiced and wiped out to give it a smooth finish and good fit. The nozzle stock is cut into long tubes and threaded at one end to fit the barrel, while the other end is turned to fit the cap. In the same way the core and top feed stock are made in long tubes then cut into small pieces, drilled, turned and tapered. The top feed is then sawed and filed, the pen slit is sawed, and the under feed stock is rounded, sawed and finished. When the various parts have been shaped up they are dipped in bi-sulphid of carbon, which brings out the beautiful black color when they are again polished. After the lathe work and polishing have been completed then comes the assembling of the various parts of the pen. The core and feeds are fitted to gold pens by careful filing, heating and bending of the feeds, and when the core is thus fitted it is pushed into the front end of the nozzle, the nozzle being heated to receive it if necessary. This is the last part of the process except the packing. It will thus be seen that the manufacture of fountain pens is largely a question of skilled labor which is one reason that they are never sold by weight.

RUBBER SHOES WITH NEEDLE TOES.

THE chief point of interest in rubber shoes this season has



been the toe. All of the fashionable shoes have had pointed toes, and yet there has been a wide difference between them in

general effect. The idea of the pointed toe is to make a short, wide foot look long and narrow. When this is done in an artistic manner, without running to an extreme, the effect is good, when the points are exaggerations it is harmful. No better exhibit of artistic and sensible toes can be found than those shown in the illustrations of the needle toe shoes. The Linden and Storm slipper, manufactured by the Boston Rubber Shoe Co., Boston, Mass.

THE HOMESTEAD GLASS SPRAY ATOMIZER.

THIS atomizer is in many ways similar to the acid oil atomizer and can be used for the same purpose. The glass spray, however, is constructed somewhat differently, the reason for the difference being that this atomizer is adapted to spray peroxid or indeed any of the liquids that will corrode or injure hard rubber. This atomizer is so made that neither the liquid nor spray comes in contact with anything but the glass, and a further advantage is that it is easily taken apart for cleansing. Manufactured by he Tyer Rubber Co., Andover Mass.

WILLIAM MORSE & CO.'S STORE.

THE store of William Morse & Co., the jobbers in rubber goods, on Reade street, New York, has been improved and its contents rearranged, with the effect of making it admirably adapted for their business. The main floor extends from Reade street back to Duane, having entrances from either street. The basement extends, not only under the whole length of this floor, but also under the sidewalk at either end. Here is kept the stock of rubbers in cases, arranged in stocks under a system of arrangement which permits of the expeditious filling of orders. In addition to the American Rubber Co.'s line of goods, to which Morse & Co. formerly confined their stock, here are now found the products of several of the other leading lines of rubber footwear, enabling the house to fill orders for any style or size of rubbers in the market. In the sub-basement, which, equally extensive with the basement floor, is kept the stock of "sizes," for filling orders for smaller lots than cases. These are also systematically arranged, on a plan designed to keep the goods well protected. On the main floor is kept the stock of rubber clothing of the American Rubber Co., with which Morse & Co. have met with such success. Here are also the surplus cases of footwear for which there is not room enough in the store-room below. These cases alone would seem enough for a large business.

RANDOM NOTES FROM PARA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The message of our governor, Dr. Lauro Sodre, to the Pará state congress at the beginning of the current session, attracted no little attention by reason of its plain statements with regard to the condition of agriculture in this state. His excellency asserted that in this connection, including the production of sugar-cane, there had scarcely been a single step of advancement for the past ten years. He quoted from the message of a previous governor (1860): "Our state income is now very satisfactory on account of the duties on India-rubber, but should the price of this product one day decline, with agriculture in its present condition, the income of the state would scarcely satisfy its necessities." What was said then is no less true now, for the constant increase in the demand for Brazilian rubber has had an equally constant tendency to tempt the people to neglect every other interest in the collection of this product, with the result that they are so much absorbed in a single industry that fears are entertained by some that the progress of the country will be retarded.

Still another new steamer has arrived here from the English builders, to be employed in trade on the Amazon and its effluents. It is called the *Maximino Motta*, it is admirably constructed, has a cargo capacity of 9360 tons, and is adapted to shallow-water navigation. It came consigned to Pedroza, Motta & Antongini, of Pará.

Mr. F. Pusinelli, of the firm of Pusinelli, Prüsse & Co., of this city and Manáos, has gone with his family for a well-earned vacation in Europe. Mr. R. Zeitz, of the firm of Rud. Zeitz & Co., is also on his way to Europe via New York.

Mr. R. F. Sears, the head of the firm of Sears & Co., of this city, is expected shortly from New York. We are all hoping that he will give another river picnic on the approaching fourth of July.

GRAO PARA.

Pará, Brazil, May 11, 1895.

TRADING IN RUBBER STOCKS.

DURING the past month there has been exceptionally active trading in the stock of the United States Rubber Co., for which the gossip of "the street" has assigned many causes. The favorable showing submitted by Treasurer Flint at the recent annual meeting of the company has been quoted as a reason for the advance in prices of the common stock. On the other hand, the tendency to advance has been held in check by the readiness of many holders of the stock who have been waiting long for a chance to turn over the money invested in Rubber, to become sellers. President Banigan has been mentioned all the while as a seller, but his friends say this is not due to any other reason than a desire to divide his wealth represented by more than one form of investment. His holdings have been so large, however, that at the current rate of selling it would take a considerable time to unload entirely.

The active selling began in the latter part of April, during which the trading in common on the New York Stock Exchange amounted to 22,595 shares, against less than half as much for the preceding month. The transactions since the first of the year have been:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
January	13,296	45	39¾	2,152	94⅝	91
February	9,075	44	39¾	1,784	94½	92½
March	10,667	41⅛	37⅜	4,984	94⅜	93¼
April	22,595	41⅝	39	8,416	94½	93
May	78,411	47¼	40	11,758	97	93¾

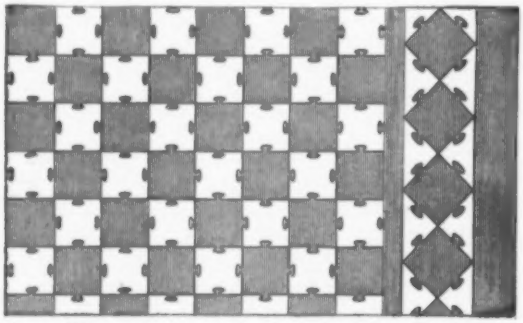
Since the first of June the trading has continued active, with a slight decline from the highest point above quoted for common stock.

RUBBER pedals are now supplied by every bicycle concern, and in most cases the purchaser can have his choice from a wide variety of forms. A visitor to the New York cycle show counted bicycles until he had numbered 282, and of these 102 were equipped with rubber pedals.

INTERLOCKING RUBBER TILING ON THE "ST. LOUIS."

THE new steamship *St. Louis*, which sailed on her first transatlantic voyage on June 5, from New York, is the first demonstration of the ability of American shipbuilders to squarely meet their foreign competitors under the modern conditions of their craft. From this standpoint the new steamer is a complete success, leading to the hope that the United States may speedily occupy a more important position among maritime nations. The daily press and the engineering journals have given much attention to those features of the *St. Louis* which it is customary to include in the description of a new steamship, but it has remained for THE INDIA RUBBER WORLD to call attention to some novel but useful details in her finishing, for which credit is due to the India rubber trade.

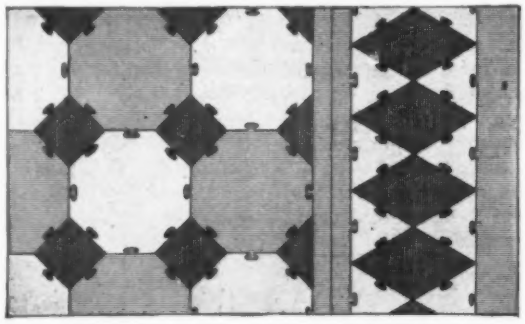
Not every passenger, on first setting foot through the spacious main entrance to the ship, will recognize the material of which the floor tiling is made, though the eye will at once be attracted. It is ornamental in appearance, offering a pleasing combination of designs and colors, but with no suggestion of being gaudy. In fact, throughout the steamer the builders have avoided what the novelist Marion Crawford calls the "inflamed" effect so much in vogue among Americans who have money to spend. For example, there is an entire absence of gilding throughout the vessel. The tiling is laid on the companion-ways, promenades, stair-landings, lobbies, etc. The foot falls upon it noiselessly, while there is an elasticity which gives a pleasant effect unknown where any other material is used. The reason for this is that the flooring is of India-rubber, cut into squares and other shapes and combined in patterns illustrated in the accompanying engravings. Because of the elastic nature of the material this tiling yields to vibration and adapts itself to unevenness and inequalities of floors; it is not damaged by exposure to any weather; it can be cleaned readily, presenting after each scouring the appearance of having been newly laid; and it will not scale or break. But a special feature is the interlocking of the tiles, which binds the whole floor together in such a manner as to prevent opening at the joints, uniting it as in one solid piece. Another advantage in the use of such a material on a steamship is the lessened liability to



slipping. While all these advantages will readily be understood by any one familiar with the characteristics of India-rubber, the use which has been made of it in equipping the *St. Louis* must be seen to be fully appreciated. This tiling was manufactured and applied by the New York Belting and Packing Co., Limited, who own the patents covering it.

But the interlocking tiling is not the only novelty in rubber which this company have supplied to the new steamer. The wainscoting of many hundreds of feet of passageways leading to the staterooms is of corrugated rubber, the corrugations running perpendicularly, and the color of the rubber harmonizing with the quiet tones which prevail throughout the steamer. Here again are experienced the advantages of durability and the readiness with which the material may be cleaned—features which make rubber cheaper in the end for such a purpose than any other material. Finally, the stair-treads throughout the steamer have also been furnished by the New York Belting and Packing Co., Limited. The latter are of white rubber, and present some new features which make them especially attractive in appearance.

The new interlocking rubber tiling, by the way, is applicable to many more uses than for steamships. For some time past



an important illustration of its advantages has been afforded in the great Broad-street railway-station, at Philadelphia, the tiling having been laid by the company above named. They have also floored a number of passenger-elevators with it in some of the principal office-buildings in Chicago and elsewhere. It is equally well adapted for use in all public and semi-public buildings where other forms of tiling are now used, in bath-rooms, and in many other situations.

The New York Belting and Packing Co. have contracted to supply the same equipment to the sister ship to the one named above (the *St. Paul*), which will be ready within a month or two for the service of the traveling public.

RUBBER TIRES FOR MANY USES.

A LETTER has been received by THE INDIA RUBBER WORLD from the Louisville (Ky.) Carriage Co., stating that they have purchased and put into use two rubber-tired coupés and have ordered more. They were manufactured in St. Louis, but the style of tires is not mentioned, further than that they are solid tires. The company write:

"We have advertised them extensively and are now getting calls for them, though we find that people do not want to pay extra for them. As the rubber tires cost us $75 for each vehicle, it will not pay us to use them on all our carriages. The manufacturers give no guarantee as to wear. One undertaker has called to see us in regard to having rubber tires put on his hearses; we think that they would be just the thing for that purpose."

Late Pittsburgh newspapers report that several private carriages in that city have been equipped lately with solid tires, and that two park-wagons have appeared with pneumatic tires. A bicycle-dealer has had a pneumatic-tired tricycle built for delivering bicycles to his customers.

A DOZEN MEN TO FIT

A RUBBER SHOE?

YOU —— THE RIGHT SIZE AND WIDTH UPON YOUR CUSTOMER'S FOOT MUST PLACE

AND ELEVEN OTHERS —— ALL SKILLED IN EVERY STAGE HAVE MADE THIS RUBBER SHOE TO FOLLOW THE NEEDLE TOE LINES AS THE GLOVE THE HAND

IF THE MEN'S NEEDLE TOE BERWICK YOU BUY

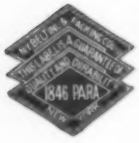
We are with you from the start, and our skilled workmen aid in making a shapely Rubber Shoe that fits — from heel to needle toe.

THIS IS OUR BUSINESS.

BOSTON RUBBER SHOE COMPANY.

Garden or Lawn Hose.

TO KEEP the grass green, the lawn beautiful, the garden thrifty, to lay the dust and cool the air, your customers will soon call upon you for Lawn and Garden Hose. Have you a stock to supply early buyers? We can furnish you with hose that will not burst, will not leak, will not sweat, that will please your customers, keep them pleased, and increase your business. From the different brands enumerated below, we can meet your views as to price and quality.



"1846 Para."—A half century of good service stands behind this hose. It is recognized as the very best in the market, being made from the finest Para rubber and cotton duck woven specially for us. Hundreds of testimonials from the trade and public place its excellence beyond dispute.

"Double Diamond."—A strong, durable hose, warranted to give entire satisfaction. It is carefully constructed of excellent stock, and there is nothing better offered, 1846 Para excepted.

"Carbon."—This brand will render entirely satisfactory service. It is constructed in a superior manner, and gives greater value for the price than any offered by other makers.

"Double Diamond" Cotton Hose.—The fabric of this hose is circular woven, of a heavy and high grade of yarn, and is so pliable that it can be bent or twisted without injury. It is exceedingly strong, will withstand 500 lbs. pressure, and we can safely warrant it not to burst under the pressure of any system of water works. Every length is tested, and if hung up and allowed to dry after use, it will render good service for years.

"Spider" Cotton Hose.—This is of precisely the same weave as the Double Diamond, and while of lighter fabric, will withstand ordinary water pressure and render reasonable service.

"Spider."—Our cheapest quality; is several grades higher than the best competition hose in the market.

NEW YORK BELTING & PACKING CO. LTD

PIONEERS AND LEADERS.

NEW YORK CITY.

Goods are best. Prices are right.

FOUNTAIN-SYRINGE PATENT SUITS.

SEVERAL members of the rubber trade have been served with a claim for damages, growing out of the alleged infringement of United States patent No. 192,584, granted July 3, 1877, to William Platt, of New York. "The patent in question," to quote from a letter sent out by counsel for Platt, "covers fountain syringes and other articles provided with elastic and flexible tubing, which is provided with a stopcock comprising a case, a movable pressure plate, and a cam-lever which engages a plate to pinch the tubing and prevent flow, and without regard to whether the plate upon which the cam-lever works is pivotally connected to the case or is a spring-plate." A statement is asked for, showing the number of infringing articles made and sold prior to July 3, 1894, which was the date of expiration of the payment, and a settlement is demanded upon the basis of such statement, in default of which an action at law is threatened.

William Platt formerly conducted a business in New York under the name of the Empire Syringe Co., but for some years past seems to have dropped out of the trade. He was one of many who attempted—none of them with complete success—to construct a satisfactory shut-off for fountain syringes, and it appears that in late years manufacturers have used indiscriminately such devices as best suited them for this purpose, without any thought of any patents involved.

Theodore Studley (New York) said to an INDIA RUBBER WORLD reporter: "Mr. Platt cannot have failed to know, during the whole lifetime of his patents, that the trade was using the form of device on which he is basing his suit and this is the first time that I ever heard of any protest from him, or any step to protect his rights. I presume that many members of the trade, in common with myself, regarded Platt's patent as having nothing valid to stand upon, and, consequently, worthless."

THE HOME OF ACCRA RUBBER.

A NEWSPAPER having been started at Accra, West Africa, the world doubtless will be kept better informed in regard to this important India-rubber mart. There are yet some people in the trade who do not know that Accra has a population almost as large as that of Pará, though a less important city in some other respects. Accra has regular mail and freight services by steamer, as well as cable facilities, but the lack of a newspaper has prevented outsiders from getting much general information concerning the city and its business. The new paper is the *Gold Coast Independent*, edited by J. Bright Davies and published by the Gold Coast Printing and Publishing Co.

Accra being the chief town of an important British colony, naturally the leading firms doing business there are English, though both German and French traders are to be found there. Most of the firms established there have houses also at Cape Coast Castle, Addah, Saltpond, or some other point on the same coast. The character of the business is largely the exchange of English goods in barter for native products, of which India-rubber is the most important, next to palm-oil. The rubber is collected far inland by the natives, who carry it to the coast on their heads, traveling together in caravans which sometimes are of great size. Most lines of goods kept by the traders for sale to the natives can be duplicated by American manufacturers, and it has been suggested to THE INDIA RUBBER WORLD more than once that, in view of the steadily growing consumption of African rubber in the United States, it might pay some firm in this country to send out cargoes of merchandise to Accra or some of the neighboring ports, on the plan adopted so successfully by the European traders in West Africa.

"AIR-CUSHION" RUBBER STAMPS.

THERE has been much activity of late and strong competition among the manufacturers of rubber stamps, and especially with regard to air-cushion "mounts" for stamps. In the last INDIA RUBBER WORLD reference was made to the settlement, out of court, of a patent-infringement suit brought by T. S. Buck (New York), against The R. H. Smith Manufacturing Co. (Springfield, Mass.), who were making cushion stamps under a patent issued to them on March 12, 1895. The latter firm now add to their announcements "Licensed under Buck's patent of September 27, 1895." But these are not the only concerns in the field. J. P. Cooke & Co. (Omaha, Neb.), obtained a patent in April for a cushion stamp, which they offer as embodying a new principle. They had already begun to supply the trade with this article, with the result that simultaneously with the issue of a patent to them, came a notice to the trade from T. S. Buck that he had placed in the hands of an attorney the matter of bringing a suit against Messrs. Cooke & Co. for infringement.

THE BENI GUM CO. AT WORK.

LITTLE has been heard of the Beni Gum Co. since its incorporation, some two years ago, under the laws of New York State, but little news is to be expected concerning any enterprise conducted in a country so remote as Bolivia, in which the Beni river flows. A recent report comes to us, however, through the British foreign office, that the company above named, have begun to gather rubber and to ship it from the Pacific coast. This is the first Bolivian rubber to reach a market by way of that coast, and the amount shipped so far is small, but the British Consul reports that the business promises to increase greatly. By the way, Bolivia has lately secured, by treaty with Peru, a seaport on the Pacific, with unobstructed right of way to the same.

So many claims for land for gathering India-rubber have lately been granted in Bolivia that the government has turned its attention to the matter. The result is a decree that no further grants will be allowed until it has been satisfactorily proved to the authorities that such tracts of land as may be involved actually exist, and have rubber-trees on them. Each grant is called an "estrada," and embraces 200 rubber-trees.

READY TO RETIRE.—*Judge.*

HEARD AND SEEN IN THE TRADE.

REPORTS from Pará on the rubber situation no longer contain any reference to Joao Goncalves Vianna (the Baron de Gondoriz), whose ambition to control the rubber markets of the world made him such a marked figure not very many years ago. There was a time when his resources seemed unlimited, and the uncertainty of what he might do next had its effect in every purchase and sale of rubber, on either side of the Atlantic. But it was soon learned that his capital was borrowed, and people who know how "heavy" rubber becomes when it has been held a year were not surprised to see his backers grow weary in the end and drop their holdings with very evident relief. The experience of these capitalists taught a lesson so thoroughly that it is almost certain that capital can never again be secured for cornering the world's rubber supply, no matter how many Viannas may offer their services as operators. The original Vianna, by the way, is now doing a small brokerage business in rubber in Mincing lane, London.

* * *

GUTTA-PERCHA cannot be said to form an important item in American manufacture. We import only about one-sixteenth of the world's production of crude Gutta-percha, and only a little more than 1 pound for every 100 pounds of India-rubber we consume. In discussing this fact an importer said: "The larger consumption of Gutta-percha in Europe is not due alone to the fact that all the ocean cables are made there. It is used in many other lines which our own manufacturers are not disposed to take hold of. The fact that India-rubber is cheaper is not the only reason. I have often had a manufacturer experiment with Gutta-percha for a certain purpose, and, if the result of the first trial was not satisfactory, he refused to try again. It appears to me that our manufacturers are not always so persistent in striving for success in a new line as are some of those abroad. But there is one important use for Gutta-percha in central Europe which we know little about as yet—in belting for beet-sugar-mills. Such belts are continually wet with the beet-juice, and nothing else has proved equal to Gutta-percha for this purpose. If the beet-sugar industry gets a good foothold here it will make a demand for Gutta-percha belts."

* * *

TALK to most people about export trade, and they will at once answer that the idea of long credits, which they understand to be common in many countries, does not suit them. But one need not go out of the United States to find long credits asked and granted. The producers of our chief agricultural staples as a rule get a return for their labor only once a year, and somewhere between the factory and the consumer, if the latter is a planter, a long credit must exist. I know a house that distributes a large volume of rubber goods, and has done so for many years, through channels which could not be reached without a liberal extension of credits. It ought not to be harder to do business on this basis with South America than with the southern United States.

* * *

I HAVE a friend in the bicycle trade, who felt justified this spring in extending his business. In looking for another store he found one so desirable that he consulted a larger dealer—one having $100,000 invested in bicycles—as to the wisdom of taking it on a five years' lease. "Don't do it," was the latter's advice; "the bicycle trade in five years may be quite another thing from what it is to-day. Go in now and make all you can out of the 'craze,' but take care to be able to let go at the right time."

"Does he expect people to stop cycling?" I asked my friend.

"Not at all. But the sale of wheels can't always go on at the present rate. At the first of the year it was estimated that about 450,000 bicycles would be turned out this year, but already the production of 600,000 seems assured. It won't take long, at the present rate, to supply everybody who wants a bicycle and who can pay for one, and then the production will fall off. The every-day wheelman is going to be content without a new machine every season, now that the manufacturers seem to have reached about the limit of improvements, and will study the care of the same bicycle from year to year. Except in the case of the larger stores—those backed directly by the manufacturers—the time is not far off when the sale of bicycles will cease to be profitable as a separate business. The sporting-goods trade, which is growing rapidly, might be combined with it, so as to attract buyers in other lines during the dull season in cycling. The renting of bicycles is not apt to increase largely, in view of the steady cheapening of wheels. In the nature of things first-class wheels cannot be kept for hire—at least the best wheels soon become damaged in this business—and at present prices a pretty good machine on instalments will cost little or no more than a renter will pay during a season for indifferent wheels."

* * *

OF course the demand for tires has kept pace with the increased production of bicycles, crowding the rubber-factories with work. Fortunately for the latter the demand for their product does not cease with the sale of the bicycle, for a good machine will need two or three sets of tires at least, before it is discarded. The rubber companies making tires do not devote their whole energy to that class of goods; besides, they manufacture tires chiefly on orders, so that their busines is less likely to be demoralized at any time by overproduction or injurious price-cutting. The bicycle trade is undoubtedly a good thing now for the rubber industry, and it is not apt to come to an end before flying-machines are a success.

THE MAN ABOUT TOWN.

THE OLDEST RUBBER FACTORY IN THE WORLD.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Among the various India-rubber factories in Europe the Harburg and Vienna India-Rubber Works deserve a few lines owing to their peculiar history, their size, the variety of work done, and the fact that their wares and goods are found in all the markets of the world where a too heavy duty does not keep them out.

As their name implies, they have works in Harburg, Germany, and in a village near Vienna, Austria. As far as the writer has been able to learn the Vienna works are the oldest in the world, having been started in 1811 by J. N. Reithoffer, who in that year commenced the manufacture of rubber thread which he used in elastic woven goods.

The Harburg factory was started in 1856. Somewhere about forty-five years ago a young man, a German, was employed as a civil engineer in New Jersey. When he returned to his native land in 1856 he was the engineer in charge of the erection of the new rubber plant. This gentleman was Carl Maret, the managing director of the company of to-day. He is a genial, enterprising, industrious man; not only is he managing the

second largest rubber company on the Continent but he is a senator, honorary Mayor of Harburg, a director in banks, hospitals and charitable institutions, besides being a magistrate.

The Harburg plant was owned and operated by Menier, the great Parisian chocolate manufacturer, whose name has become almost a household word throughout the world. Menier became senator soon after the disastrous war of '70-'71, and the French people, failing to understand how a Frenchman, and a French senator at that, could find employment for a host of their then deadly enemies, such an adverse public opinion was created among them that he felt obliged to part with his German venture. In 1872 a syndicate was formed and both the establishments under consideration were purchased by it. The result was the formation of a company with a most euphonious title which I give, trusting that you may find space enough to print it: Vereinigte Gummi-Waaren-Fabriken Harburg-Wien, vormal Menier, J. N. Reithoffer. The value of the rubber stamp will certainly be admitted when it is known that all documents emanating from them are signed as above.

Both of the factories are operated from Harburg, the Austrian establishment being entirely subordinate to the German. Each of these factories produce about an equal amount of goods, and employ an equal number of hands, *i. e.*, 1500 in each place.

In Harburg are made boots and shoes, clothing, mechanical and surgical goods in both hard and soft rubber, and last, but not least, rubber balls. The latter are made throughout the year, but during their so-called ball season, lasting but six months in the year, no less than 5000 dozen balls are made per day. These are found in great numbers in our own market.

Their rubber boot and shoe trade is very important, their goods being found in great numbers in the principal European countries as well as in the East. In using the word "important" in this connection we use it from the European standpoint. The capacity of the Harburg factory is about 12,000 pairs a day, but at the time of my visit there they were making only about 3000 pairs, and I may say right here that I found the same state of affairs in all the rubber boot and shoe factories of Europe.

The employees are an intelligent and apparently well satisfied lot of people; so much so that a strike has never taken place or even been threatened in this factory. As in St. Petersburg, the Harburg works have their dispensary, with a physician in daily attendance. The company maintains a pension fund for employees invalidated by age or disease, and also a relief fund, to which each employee contributes a nominal sum; this is drawn upon in case of sickness. A feature which is thought much of by the employees is the roll of honor; upon this are inscribed all of those who have served the company for twenty-five years; there are at present 200 people carried on this roll, and each one, upon attaining this distinction, is the recipient of a diploma and a medal. The staff is well educated and quite scientific, and contains among others three chemists and five mechanical engineers. I did not have the pleasure of visiting the Vienna works, but from reliable sources I learn that they make almost everything made in the rubber line, their specialty being, however, vulcanite; their capacity for boots and shoes is about the same as Harburg's but they too were making but a small portion of what they could owing to a strike which took place here about two years ago, just at a time which crippled them, and sent much of the trade elsewhere for goods. I am told that they are, however gradually regaining the lost ground.

The general management of both concerns is in the hands of Mr. Maret, but the commercial management is in the hands of Mr. Louis Hoff. Mr. Hoff is a typical German tradesman, pushing, indefatigable, and of that genial good nature which is bound to make friends of all whom he meets. In order to be fully prepared to perform the duties of his department he followed the usual German custom of studying the markets of the world on the ground. As selling agent he has traveled all over North and South America, studied the production of rubber in Pará, visited all the cities of Europe, and went even into Anatolia, studying the requirements of the Asiatic. After several years devoted to these duties he assumed the position he now holds with so much credit to himself and profit to the company. That the company is a successful one is shown by the fact that dividends for the last 20 years have averaged from 16% to 17%.

In traveling through Germany one comes to the realization that in the rubber boot and shoe trade, at least, this company does not have everything its own way. In many of the stores where their goods are sold one sees numbers of shoes of American make; the Boston Rubber Shoe Co.'s well known goods were seen everywhere, but the real competitor of this company on their own territory is the Russian-American Co., while not a single pair of German shoes are seen in Russia. The Russian tariff is prohibitive, being 220 marks on 100 kilos, while the German tariff is but 60 marks on the same amount.

The writer had some very important transactions with this company and found them liberal and straightforward in all their dealings. In looking up their standing as a business concern the most flattering reports were received alike from banks and large manufacturing establishments.

A. M. STICKNEY.

Medford, Mass., May 25, 1895.

THE NEW CONSUL TO ZANZIBAR.

AN item of news which is likely to prove of interest to the India rubber trade announces the appointment of Lieut. R. Dorsey Mohun as United States consul to Zanzibar. For some time past this gentleman has filled the position of United States commercial agent in the Kongo Free State, with headquarters at Boma, which will not exist after June 30, owing to the failure of the last congress to make further appropriations for it. Lieut. Mohun while in Africa made important contributions to the world's knowledge of the geography of the Kongo basin, besides exerting himself to further trade relations between the United States and that country. He recently resigned his position at Boma in order to accept a decoration from the king of Belgium, whose interest in the Kongo state is well known. He took no little interest in India-rubber while in office before, which leads to the supposition that he will not be less interested in this commodity on the east coast of Africa. A very notable stimulus to the commerce of Zanzibar with the outside world was given by the long and arduous efforts of Sir John Kirk, while British consul-general at Zanzibar. Sir John will be remembered particularly for his discovery on the African coast opposite this island of a new India-rubber plant (*Landolphia Kirkii*), the product of which is now exported at the rate of 1,000,000 pounds or more per year. Forty years ago the United States had an important trade with Zanzibar, in the exchange of cotton goods for cloves (of which Zanzibar is the principal producer) and other native products. With the additional item of India-rubber to be considered, and with the efforts in the behalf of trade of such a consul as Lieut. Mohun may be expected to make, our former trade with Zanzibar ought to be restored and largely increased.

MR. H. O. CANFIELD, Bridgeport, has added another department to his business, that of fine wrapped work.

TRADE AND PERSONAL NOTES.

JUST as we go to press we learn that an appeal has been taken from the decision of the patent-infringement suit of the Chemical Rubber Co. *v.* the Raymond Rubber Co. The decision is given in full on another page of this paper.

—Some little time ago THE INDIA RUBBER WORLD illustrated and described a tiny toy trumpet of rubber, the invention of Mr. C. J. Bailey, of Boston. Very soon after the issue, Mr. Bailey showed to the editor twelve letters, from Russia, Germany and Holland, and one cablegram from Russia ordering these toys. All of these said the inventor came directly from the article mentioned.

—The Home Rubber Co. (Trenton) have ordered new grinders and calenders, and are contemplating a further enlargement of their plant.

—The Meyer Rubber Co. have commenced a suit against Clarkson M. Snedicor, a dealer in rubber goods at Detroit, Mich., on an open account, commencing in April, 1894, and continuing until November of the same year. The amount claimed to be due the plaintiff, according to an itemized bill attached to the declaration in the case, is $18,046.74.

—The strike of the employés of the Boston Gossamer Rubber Co. has continued during the past month, forming the chief topic of interest at Hyde Park. Several contributions of money for the benefit of the strikers have been made by labor organizations. The Massachusetts state board of arbitration and mediation made a report to the effect that the strike was caused by the action of the company in refusing all offers of conciliation from, or arbitration with, their employés on a question of wages.

—The Cable Insulator Co. have been incorporated under the laws of Maine to manufacture and deal in insulators and electrical appliances. The capital stock is to be $10,000, of which $300 has been paid in. The president is W. P. Sargent, and the treasurer Samuel Oakman, both of Melrose, Mass.

—The Canadian Rubber Co. of Montreal, were reported lately as being engaged on an order for 30,000 pairs of shoes from Australia. They have also received good orders from Australia for hose and belting, and hope to build up a large trade in that quarter.

—The Magnolia Metal Co. (New York and Chicago) report that their business during the month of May was larger than for the same month during the past two years, and that they have abundant evidence of a general revival in business. As their business is largely with mills and manufacturers in all parts of the country, this is a good indication of the improvement which has been so long looked for in this country.

—Mr. J. G. Pierce, of the Ireson Rubber Co., has just returned from a very successful trip throughout the Western country. While he was away he established agencies for "Blue Blood" packing at 49 different points between Albany and Denver. On Thursday last he left for an extended Southern trip, covering all points between New York and Galveston, and reaching the whole territory East of the Mississippi. His aggregate sales on the Western trip amounted to no less than 24 tons of "Blue Blood" packing, and as may be readily inferred, the packing can now be secured in all of the larger cities East of Denver,—Mr. Pierce having previously made a like tour of all the Northwestern states. This is certainly an enviable record for the "Blue Blood" packing. The trotting horse which indicates their trade-mark is evidently well branded, and has a speedy mate in Mr. Pierce.

—The Rhode Island Supply & Rubber Co. (Providence) have removed to a new and finely fitted store at 47 Washington street. The store proper is 84 × 24 ft., has a fine plate glass front, is finished in hard wood, and is on one of the busiest streets in the city.

—Mr. H. Willis Austin has accepted a position as salesman for the Home Rubber Co., of Trenton, N. J. Mr. Austin will care for the trade in and about New York.

—The photograph of the late Wm. H. Corner, Jr., from which the very excellent picture was made that appeared in THE INDIA RUBBER WORLD last month, was loaned by Mr. G. H. Proctor, of the Boston Rubber Co., an act of thoughtfulness that Mr. Corner's many friends will surely appreciate.

—The United States Rubber Reclaiming Works, is a new concern that is already in the market with all grades of reclaimed rubber. The company have a fine plant in Shelton, Connecticut, their offices being in the Downing Building, Fulton, street, New York. All of the names of those who are officers in the company are familiar to the trade. They are, Royal M. Bassett, Prest., Max Loewenthal, Treas., Theodore S. Bassett, Selling Agent.

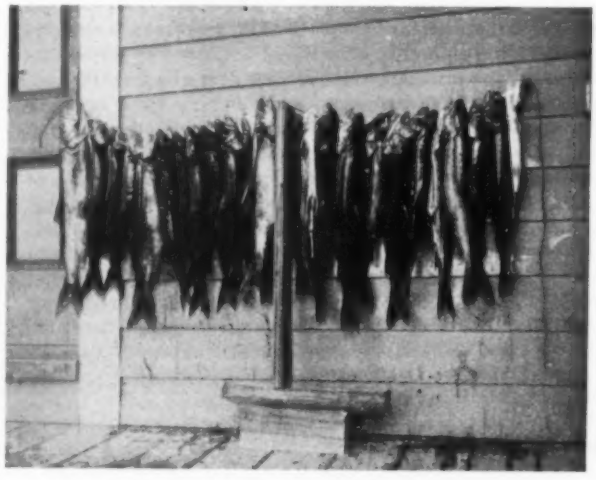
—In answer to an inquiry, the Conant Rubber Co., now building a mackintosh plant at South Framingham is owned by the two sons of the late Ira Conant, and has no connection with the Gossamer Rubber Co., also at South Framingham, operated by a brother of Ira Conant.

—The Birmingham Iron Foundry, at Derby, Conn., are adding new buildings to their already large plant. They expect shortly to show to the rubber trade, through our columns, several new and improved types of calenders, grinders, etc.

—The Hope Rubber Co. (Providence) have just taken an order for 5000 feet of fire hose, which is but one of four similar orders that they have secured in Rhode Island.

—The Lowell Rubber Co. (Lowell, Mass.) have just fitted out the new post office building in that city with hose, reels, couplings and other necessities in the line of mechanical rubber goods.

—The remarkable string of trout shown in the accompanying illustration, was caught in one morning at Moosehead Lake, Maine. The largest lake trout weighed nine and one-quarter pounds and the largest square-tail four pounds. They were all caught by Mr. James H. Hardman, Jr., of the Riverside Rubber Works, Belleville, N. J.



—Miss Rockefeller, daughter of the Standard Oil king, drives about New York in a rubber-tired hansom, which the *World* describes as being so simple in appearance that it is conspicuous. It is wholly black, and drawn by a big, black horse.

—The Philadelphia Commercial Museum, Philadelphia, Pa., which has been so widely and favorably commented upon by the newspapers, aims among other things to have rubber exhibits, and to make them as complete and valuable as possible.

—The Clifton Rubber Mfg. Co. (Boston) after enlarging their plant have begun the manufacture of specialties in mechanical rubber goods.

—Mr. J. Francis Hayward, Treasurer of the Cable Rubber Co. (Boston), has returned from his six weeks' trip through the west.

—The Newton Rubber Works (Newton Upper Falls, Mass.) have been so crowded with orders that they have been obliged to enlarge their plant.

—Mr. B. T. Morrison, Treasurer Reading Rubber Works (Boston), has returned from a fishing trip to Rangely, Maine.

—Mr. Alfred Lindsay, Manager of the Stoughton Rubber Co. (Boston), is just back from his semi-annual trip among his customers in the west.

—A composite photograph of six of the large shoe advertisers who use "Kellogg's lists" is reproduced in *Boots and Shoes Weekly*. The personality of George Watkinson, one of them, impresses itself so strongly that the composite looks strikingly like him.

—The works of the Middlesex Rubber Co. (Middletown Conn.) were among the establishments closed during the recent flood in the river from which their power is derived.

—The factories of the Metropolitan Rubber Co. and of the New York Insulated Wire Co., at Wallingford, Mass., are reported to be running extra time on account of good orders.

—The machinery ordered by the Diamond Rubber Co. (Akron, Ohio) for equipping their new plant in the building formerly occupied by the Diamond Match Co., was received lately and is being installed.

—G. W. Sanders, president of the Sanders Duck and Rubber Co. (St. Louis), was fined lately for contempt of court for failure to appear when summoned as a witness in McCarthy *v.* the Columbia Rubber Co. Mr. Sanders explained that he thought word would be sent to him whenever his presence as a witness was necessary.

—The Hodgman Rubber Co., of New York, are putting on the market a new air-mattress which is having quite a satisfactory sale.

—Mr. W. H. Adams, Boston, has removed his office from 115 Devonshire street to 657 Washington street, where he has ample office room in the well-known Boylston block. He handles the latest improved fire hose and general fire department supplies.

—At the Bristol (R. I.) town meeting recently, a motion was defeated to rescind the vote, taken six years ago, exempting the National India Rubber Co. from taxation for ten years.

—The Liberty Rubber Shoe Co. (Setauket, L. I.) report a daily production of 3000 pairs of tennis-shoes. They expect by June 15 to have out samples of rubber shoes in staple styles, and to begin making 5000 pairs a day. The company are encouraged by the number and character of the letters which have come to them from the shoe trade since their entrance into the field was announced.

—The rubber-shoe jobbers of Boston have decided to close their stores during the summer months on Saturday afternoons.

—W. E. Alling has retired from the Alling Rubber Co., of Norwich, Conn., the business of which will be continued by W. S. Alling alone. They will occupy new quarters, at No. 149 Main street, after July 1.

—The Metropolitan Rubber Co. have begun the manufacture of bicycle tires at their factory at Wallingford, Mass. They are making hose-pipe and inner-tube styles, their first goods in this line having come out since the last issue of this paper.

—The Newport (R. I.) Web Co., in which Edward F. O'Brien was the leading spirit, has been reorganized under the name of the Matthew Campbell Web Co., with Mr. O'Brien as manager. This gentleman has had a rather lively time since entering the elastic-web business at Newport. His former partners, claiming that he owed them large sums of money, took advantage of the antiquated debtor laws of Rhode Island—the only state that retains such laws—and had O'Brien arrested and imprisoned for the alleged debt. The organization of the new company would indicate that he is having things more nearly his own way again.

—The business of the firm of E. B. Preston & Co. (Chicago) is to be continued on the same lines as before the death of Mr. Preston, which was reported in the last INDIA RUBBER WORLD. In addition to their regular rubber-goods trade the firm have had an active business of late in their "Czar" bicycles.

—The Massachusetts Rubber Co. has opened a rubber-clothing store at No. 40 Elm street, Amesbury, Mass.

—The Liberty Rubber Shoe Co. (Setauket, L. I.) are adding to their plant a two-story extension to one of their buildings, 60×80 feet.

—In a fire in New York on May 17 James Wilkinson, described as a manufacturer of bone and rubber novelties, at No. 210 Canal street, suffered a loss estimated at $10,000.

—Albert H. Jones, well known in the India-rubber and harness trade in the west, died at his home in Chicago on May 6. He was also prominent in Masonic circles and was a war veteran.

—The body of Richard A. Bown, until recently shipping clerk for the Seamless Rubber Co. (New Haven, Conn.), was found near that city on May 13, under circumstances indicating suicide.

—The president of a silk-manufacturing company seeking a location at Colchester, Conn,, has been in correspondence with the Colchester Rubber Co. in reference to leasing the plant formerly operated and still owned by them.

—The B. F. Goodrich Co. (Akron, Ohio) are making extensive additions to their factory. Building permits have recently been obtained for a four-story building 50×260 feet, with a one-story wing 30×24 feet, and a one-story building 125×50 feet. A force of workmen is actively employed on the projected buildings, which are to be of brick and stone and constructed in the best manner.

—The executors of the estate of Christopher Meyer, the millionaire rubber-manufacturer, filed their final accounting in court at New Brunswick, N. J., on May 8.

—Mr. Walter A. Clapp, who travels for the Boston Rubber Co., is one of the genial crowd who form the Imperial Club of Commercial Travelers, and who have an annual dinner in one of the thriving cities of the Pine Tree State. At the election of officers this year he was made one of the executive committee.

—Mr. Geo. Pellinger, for ten years past superintendent of the Goodrich Hard Rubber Co., Akron, Ohio, has acquired an interest in the Goodyear Vulcanite Co., 353 Broadway, N. Y., and has taken charge of the manufacture of hard rubber goods for their electrical branch. The company are putting in new machinery and adding to their plant at Morrisville, Pa.

REVIEW OF THE INDIA-RUBBER MARKET.

THE latter half of May was a period of marked activity in the crude-rubber trade, followed by a comparative dullness, though unaccompanied by any decline in prices, beginning with the first of June. On the whole prices of the leading grades are higher now than at the date of ourlast review, and under all the conditions it would not have been surprising if a speculative movement should have been organized in the "bull" interest. The ghost of Vianna's boom —if it still lingers anywhere in the universe—must have been uneasy lately at the sight of decreased receipts at Pará, low stocks everywhere, and an exceptional manufacturing demand. It is the opinion of the crude-rubber houses that the present check in buying is only temporary—probably to last only until the middle of the month—after which manufacturers will again be obliged to come into the market, and an upward movement in prices is not improbable.

The bicycle industry continues to be the central feature of interest. There is not a concern in the country engaged in making tires which is not running up to capacity, while the largest manufactory in the business has been at work of late from 1 A. M. on Monday until 11 o'clock Saturday night. Some other plants are not far behind in the point of running time. All the shoe-manufacturers are also going on full time, and other branches of the rubber industry are well supplied with orders. In consequence the visible supply of Pará rubber here is only one-third of the amount at this date last year.

The imports of Africans during the calendar month of May were unusually large, and it is reported that the whole volume of arrivals went at once into the hands of manufacturers. About half the Africans received were Benguella niggers, the price of which has sustained an advance during the month.

In England and on the continent the conditions of the rubber industry are similar to those obtaining on this side of the Atlantic, with the exception that the various branches of production are not extending so rapidly there as in America. Not only the population but the buying capacity of the American States is steadily increasing, whereas conditions of life and of trade abroad are more settled. The limit to possible extension here is nowhere in sight.

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper (New York), advise us as follows:

"During May, our banks steadily increased their legal reserves, until last week the excess was over $40,000,000. With this, the volume of business in some branches has decreased, so that these causes have resulted in a large increase in loanable funds, and revise rates for commercial paper as follows: First-class endorsed receivables, 3@3½ per cent.; first-class Single-name notes, 4½@5 per cent., and all four to six months to run. Rubber paper is scarce and wanted.

The statistical position of Pará rubber in New York and elsewhere is as follows, the figures expressing tons of 1000 kilograms:

	Fine and Medium.	Coarse.	Totals.	Totals 1894.
Stock, April 30	364	98	462	= 1465
Arrivals, May	454	180	634	= 336
Aggregating	818	278	1096	= 1801
Deliveries, May	487	228	715	= 553
Stock, May 31	331	50	381	= 1248

	1895.	1894.
Stock in England, May 31	1360	1505
Deliveries in England, May	460	550
Pará receipts, May	830	810
Stock in Pará, May 31	292	465
World's supply May 31 (excluding Caucho)	2554	3883
Pará receipts since July 1	18,675	18,940

PRICES FOR MAY (ISLAND RUBBER).

	1895.		1894.		1893.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First	72	47	66	43½	75	49
Highest	74	49	66	44	75	50
Lowest	72	47	65	42½	74½	49
Last	73½	49	65	43	74½	49

The latest quotations in the New York market are:

Pará, fine, new t a	73½@75½	Benguela	47@47½
Pará, fine, old	78 @81	Kongo Ball	36@40
Pará, coarse, new t a	49 @56	Cameroon Ball	36@38
Caucho (Peruvian) strip	@48	Flake, Ord. and Lump.	23@24
Caucho (Peruvian) ball	@53	Accra Flake	15@18
Mangabeira, sheet	38 @41	Liberian Flake	26@27
Esmeralda, sausage	52½@53	Primest Pinky Madr	60@62
Guayaquil, strip	36 @45	Madagascar, black	43@45
Nicaragua, scrap	51 @53	Borneo	26@
Nicaragua, sheet	49 @50	Gutta-percha, fine grade	1.30
Thimbles	35 @36	Gutta-percha, medium	1.00
Tongues	35 @37	Gutta percha, hard white	85
Sierra Leone	25 @42		

IMPORTS FROM PARA.

THE receipts of India-rubber direct from Pará and Manáos at the port of New York since our last publication are reported in detail below, the figures referring to pounds:

May 14.—By the steamer *Paraense*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	67,100	39,600	19,400	700	126,800
Lawrence Johnson & Co.	15,000	1,400	....	.....	16,400
Reimers & Meyer	.....	....	7,200	....	7,200
Shipton Green	2,800	700	1,100	.....	4,600
Totals	84,900	41,700	27,700	700	155,000

May 21.—By the steamer *Indian Prince*, from Pará:

Reimers & Meyer	137,200	33,100	51,500	105,700	327,500
New York Commercial Co.	14,300	2,100	10,800	1,000	28,200
Lawrence Johnson & Co.	.....	.....	9,600	.....	9,600
Totals	151,500	35,200	71,900	106,700	365,300

May 25.—By the steamer *Basil*, from Manáos and Pará:

New York Commercial Co.	227,800	10,700	59,400	12,300	310,200
Reimers & Meyer	67,100	22,900	52,800	1,700	144,500
Boston Rubber Shoe Co.	15,100	2,100	11,600	.....	28,800
Joseph Banigan	11,200	1,800	7,500	3,500	24,000
Lawrence Johnson & Co.	11,800	3,300	26,000	1,000	42,100
Totals	333,000	40,800	157,300	18,500	549,600

June 4.—By the steamer *Hilary*, from Pará:

New York Commercial Co.	73,900	9,900	41,500	67,100	192,400
Lawrence Johnson & Co.	62,800	7,900	26,900	5,400	103,000
Reimers & Meyer	22,100	5,700	24,400	....	52,200
O. G. Mayer & Co.	16,100	3,600	.....	.....	19,700
George C. Cowl	.....	.....	3,600	.....	3,600
Totals	174,900	27,100	96,400	72,500	370,900

May Imports from Pará	1,651,400
April Imports	2,156,400
March Imports	3,611,700
February Imports	2,274,400
January Imports	2,869,500
April, 1894	2 566,868
April, 1893	3,881,400

OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York, during May, 1895, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts:

CENTRALS.

	POUNDS.
MAY 1.—By the *Vigilancia*=Mexico:	
H. Marquardt & Co	2,000
H. W. Peabody & Co	2,000
J. W. Wilson & Co	1 500
L. Monjo, Jr., & Co	500
E. Steiger & Co.	500
Fred. Probst & Co	300
Graham, Hinckley & Co	200
Total	7,000
MAY 1.—By the *Colombia*=Colon:	
A. P. Strout	5,000
J. Aparicio & Co	2,000
W. R. Grace & Co.	1, 00
A. James & Co	00
W. Loaiza & Co	200
Samuels Bros	100
Total	8,800
MAY 1.—By the *Athos*=Cartagena:	
A. M. Capen Sons	2,500
D. A. de Lima & Co	1,500
Kunhardt & Co.	1,500
Total	5,500
MAY 1.—By the *New Orleans*=New Orleans:	
Earle Bros	4,500
MAY 2.—By the *Finance*=Colon:	
G. Amsinck & Co.	2,700
Piza Nephews & Co	2,400
A. N. Rotholz & Co.	600
G. R. Cottrell & Co	500
Total	6,200
MAY 2.—By the *El Dorado*=New Orleans:	
F. H. Robinson	2,000
MAY 3.—By the *Prussia*=Hamburg:	
Reimers & Meyer	7,000
MAY 4.—By the *Umbria*=Liverpool:	
Reimers & Meyer	3,500
MAY 4.—By the *Bessel*=Bahia:	
Reimers & Meyer	8,000
MAY 7.—By the *Adirondack*=Cartagena:	
D. A. DeLima & Co	2,500
Punderford & Co	2,000
Kunhardt & Co	1,000
Total	5,500
MAY 7.—By the *Knickerbocker*=New Orleans:	
A. T. Morse	3,700
A. N. Rotholz & Co	300
Total	4,000
MAY 8.—by the *Orizaba*=Mexico:	
H. W. Peabody & Co	1,000
H. Marquardt & Co.	200
E. N. Tibballs	200
Total	1,400
MAY 9.—By the *El Rio*=New Orleans:	
Earle Bros.	10,000
MAY 11.—By the *Alliance*=Colon:	
A. Santos & Co	12,600
Flint, Eddy & Co	6,200
Munoz & Espriella	3,500
W. R. Grace & Co.	5,500
Roldan & Van Sickel	3,000
G. Amsinck & Co	2,100
To Order	2,100
Dumarest & Co.	2,100
Wallace Mulier & Co	1,900
Hirzel, Feltman & Co.	800
Piza, Nephews & Co	800
A. M. Capen Sons	700
G. R. Cottrell & Co.	600
T. Kuble & Co	500
Total	42,600
MAY 13. By the *Bovic*=Liverpool:	
Reimers & Meyer	5,500
MAY 13.—By the *Newport*=Colon:	
J. M. Ceballos & Co	4,200
J. Aparicio & Co.	1,300
Eggers & Heinlein	800
G. R. Cottrell & Co	700
Boyle & Co	600
A. P. Strout	600
Munoz & Espriella	500
F. Probst & Co	200
H. Marquardt & Co	200
Total	9,100
MAY 14.—By the *Paraense*=Maranham:	
G. Amsinck & Co	6,500
MAY 14.—By the *Portia*=Gracias:	
Eggers & Heinlein	4,000
K. Mandell & Co.	1,000
Pomares & Cushman	500
A. S. Lasselles & Co	500
Total	6,000
MAY 14.—By the *Louisiana*=New Orleans:	
Earle Brothers	6,000
W. H. Crossman & Bros.	1,500
Total	7,500
MAY 15.—By the *Seguranca*=Mexico:	
H. Marquardt & Co.	1,000
H. W. Peabody & Co	1,000
J. W. Wilson & Co	600
Jose Agostini	200
Total	2,800
MAY 20.—By the *Runic*=Liverpool:	
Windmuller & Roelker	5,800
Shipton Greea	1,200
Total	7,000
MAY 20.—By the *Columbia*=Boco de Toro:	
For Hamburg	500
MAY 21.—By the *Ailsa*=Greytown:	
Ellinger Bros	800
MAY 21.—By the *New Orleans*=New Orleans:	
Earle Brothers	7,500
A. N. Rotholz & Co	2,500
Total	10,000
MAY 23.—By the *Alvena*=Cartagena:	
D. A. de Lima & Co	3,300
Kunhardt & Co	200
Total	3,500
MAY 23.—By the *Advance*=Colon:	
Flint, Eddy & Co.	14,300
Munoz & Espriella	9,600
New York Commercial Co.	7,000
A. Santos & Co	5,500
Roldan & Van Sickel	2,200
Geo. R. Cottrell & Co	1,500
Piza Nephews & Co	3,0
Samper & Juinenez	200
Lanman Kemp	100
Total	40,700
MAY 28.—By the *Cevic*=Liverpool:	
Reimers & Meyer	7,500
MAY 28.—By the *Alene*=Savanilla:	
G. Amsinck & Co	700
MAY 28.—By the *El Rio*=New Orleans:	
Earle Brothers	2,500
MAY 28.—By the *Knickerbocker*=New Orleans:	
Earle Brothers	7,500
A. N. Rotholz & Co	1, 00
W. H. Crossman & Bro.	1,000
Total	10,000
MAY 28.—By the *Alfred Dumois*=Gracias:	
Eggers & Heinlein	15 000
Samper & Juinenez	6 000
K. Mandell & Co	500
Total	21,500
MAY 29.—By the *Yucatan*=Mexico:	
J. W. Wilson & Co	700
H. Marquardt & Co.	300
H. W. Peabody & Co	200
Total	1,200
MAY 29.—By the *Jamaica*=Greytown:	
A. P. Strout	15,200
Andreas & Co.	17,300
G. Amsinck & Co	3,500
Munoz & Espriella	2,500
O. G. Mayer & Co	2,000
Elmenhorst & Co	500
Total	41,000
MAY 31.—By the *Finance*=Colon:	
New York Commercial Co.	3,200
Piza, Nephews & Co.	2,000
Flint, Eddy & Co	1,800
I. Brandon & Bro	1,200
A. N. Rotholz & Co	500
Total	8,700
MAY 31.—By the *Bellena*=Bahia:	
Reimers & Meyer	8,000
Total Centrals for May	317,000
Total for April	168 072
Total for March	290,283
Total for February	239,251
Total for January	341,029

AFRICANS.

	POUNDS.
MAY 3.—By the *Persia*=Hamburg:	
Reimers & Meyer	22,000
MAY 4.—By the *Umbria*=Liverpool:	
Reimers & Meyer	2,700
MAY 7.—By the *Nomadic*=Liverpool:	
Reimers & Meyer	29,000
MAY 10.—By the *Palatia*=Hamburg:	
George A. Alden & Co.	2,100
MAY 10.—By the *Britannic*=Liverpool:	
Wm. A. Brown & Co	26,300
MAY 17.—By the *Bovic*=Liverpool:	
George A. Alden & Co.	166,000
Wm. A. Brown & Co.	10,000
Reimers & Meyer	13,2 0
Total	189,200
MAY 17.—By the *Dania*=Hamburg:	
Reimers & Meyer	9,000
MAY 18.—By the *Etruria*=Liverpool:	
George A. Alden & Co.	12,300
Otto G. Mayer & Co	5,100
Total	17,400
MAY 18.—By the *Amalfi*=Hamburg:	
Otto G. Mayer & Co	11,700
MAY 20.—By the *Manitoba*=London:	
Reimers & Meyer	6,100
MAY 20.—By the *Runic*=Liverpool:	
Reimers & Meyer	88,000
MAY 20.—By the *Scandia*=Hamburg:	
George A. Alden & Co.	55,000
MAY 22.—By the *La Gascogne*=Havre:	
J. D Nordlinger	2,000
MAY 23.—By the *Patria*=Hamburg:	
George A. Alden & Co.	21,500
Reimers & Meyer	10,300
Total	31,800
MAY 24.—By the *Campania*=Liverpool:	
George A Alden & Co	8,600
O. G. Mayer & Co	11,400
Total	20,000
MAY 28.—By the *Cevic*=Liverpool:	
George A. Alden & Co	30,000
Reimers & Meyer	11,000
Total	41,000
MAY 29.—By the *Teutonic*=Liverpool:	
W. A. Brown & Co	18,000
MAY 29.—By the *Peninsular*=Lisbon:	
George A. Alden & Co.	244,000
Reimers & Meyer	43,000
Otto G. Mayer & Co	23,000
Total	310,000
MAY 31.—By the *Prussia*=Hamburg:	
George A. Alden & Co.	24,000
O. G. Mayer & Co	8,000
Total	32,000
Total Africans for May	884,100
Total for April	367,200
Total for March	374,554
Total for February	441,500
Total for January	582,000

EAST INDIAN.

	POUNDS.
MAY 7.—By the *Mobile*=London: Reimers & Meyer	2,500
May 7.—By the *Hindoo*=London: George A. Alden & Co.	22,400
Reimers & Meyer	3,200
Total	25,600
MAY 7.—By the *Nomadic*=Liverpool: Reimers & Meyer	4,500
MAY 12.—By the *Monmouthshire*=Singapore: George A. Alden & Co.	25,700
Reimers & Meyer	27,000
Total	52,700
MAY 13.—By the *Massachusetts*=London: Wm. A. Brown & Co	11,000
MAY 17.—By the *Dania*=Hamburg: Reimers & Meyer	6,500
MAY 28.—By the *Cevic*=Liverpool: Geo. A. Alden & Co.	6,100
MAY 28.—By the *Mississippi*=London: Reimers & Meyer	10,000
Total East Indian for May	118,900
Total for April	451,000
Total for March	487,300
Total for February	110,000
Total for January	28,800

RECAPITULATION.

	POUNDS.
Pará—direct imports	1,651,400
Centrals	317,000
Africans	884,100
East Indian	118,900
Total at New York for May	2,971,400
Total for April	3 142,672
Total for March	4,858,383
Total for February	3,080,151
Total for January	4,038,229

BOSTON ARRIVALS.

	POUNDS.
MAY 8.—By the *Sylvania*=Liverpool: Reimers & Meyer—Africans	28,000
George A. Alden & Co.—Africans	44,540
MAY 12.—By the *Scythia*=Liverpool: George A. Alden & Co.—Africans	3,200
East Indian	13,000
MAY 12.—By the *Ottoman*=Liverpool: George A. Alden & Co.—East Indian	10,000
MAY 14.—By the *Mentmore*=London: George A. Alden & Co.—East Indian	6,960
MAY 20.—By the *St. Romans*=London: George A. Alden & Co.—East Indian	4,400
MAY 23.—By the *British Queen*=London: George A. Alden & Co.—East Indian	4,700
MAY 23.—By the *Cephalonia*=Liverpool: George A. Alden & Co.—Africans	10,600
MAY 26.—By the *Sagamore*=Liverpool: George A. Alden & Co.—Africans	4,590
Total at Boston for May	129,620

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